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CANADA - U.S.
SECTORAL TRADE STUDY

April, 1985

A Background Paper
Prepared For
Royal Commission on the Economic Union and
Development Prospects for Canada.
Ottawa, Ontario

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PREFACE

In the fall of 1984, the Royal Commission on the Economic Union and Development Prospects for Canada was intensively reviewing Canada's trade options as part of its mandate to report on Canada's prospects. Commissioners had available a wealth of material from the research program of the Commission as well as from other researchers, governments and the private sector. Much of this research is at the aggregate and theoretical level.

Commissioners believe that governments and the private sector require a basis for common understanding of the possible impact of freer trade at the sectoral level as well. At that time there was no consistent evaluation of freer trade sector by sector. The Commission asked staff to take the first steps on such a course and in doing so to encourage both governments and the private sector to initiate their own work in this area which would be critical to a successful outcome to any discussions with the United States or with other countries on a multilateral basis.

This study under the direction of Professor Gilbert R. Winham, Department of Political Science, Dalhousie University served as background to the Commission's deliberations on the sectoral impact of freer trade. Although not formally part of the published research program of the Commission, we are making it available to the public as resource tool in the ongoing discussion on Canada's trade options. The views presented in this study are those of the authors and do not necessarily represent the Commission. The Commission has addressed these questions in Part II of its Report.

Alan Nymark
Director of Policy

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AUTHORSHIP

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Advice and assistance was received from Andrew Moroz, Institute for Research on Public Policy; Jock Finlayson, Business Council on National Issues; and Victor L. Clarke and Roderick Hill, Royal Commission on the Economic Union and Development Prospects for Canada.

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INTRODUCTION

Trade relations with the United States has been a recurring and controversial political issue in Canadian history. Recent domestic and international events have once again fuelled a debate over the current terms of trade between two countries. As a subject of national discussion, it was inevitable that Canada-U.S. trade would be examined by the Royal Commission on the Economic Union and Development Prospects for Canada. Clearly it was desirable that any such examination should be informed as much as possible by current facts and statistics.

The purpose of this study was to assess the probable impact on Canada of freer trade with the United States. In this study we have attempted to: (i) disaggregate trade into readily-comprehensible sectors and sub-sectors; (ii) assess the level of existing protection, particularly on the Canadian side, that would be reduced if freer trade were achieved; and (iii) evaluate the probable impact of freer trade, sector by sector.

The study sought to avoid duplicating other research. Analyses of the impact of freer trade have been conducted by private economists, but these have been more theoretical than this study. Conversely, departments of the federal government have produced studies of Canadian industrial sectors, but these have not emphasized Canada-U.S. trade. The focus of this study was to examine trade impacts at the same level that governments often negotiate trade policy, namely, at the level of the sector. Our aim was to demystify the issue of freer trade, and to

move the discussion as much as possible from the realm of the abstract and the speculative to the realm of the concrete and the probable.

It must be stressed that this study is a first step in analyzing the sectoral impact of free trade. Much of the analysis is based on existing data resources of Statistics Canada, and on interviews with representatives of organizations who themselves have only recently begun to study the impact of free trade on their sectoral interests. Occasionally, perceptions of the same sector differ considerably among individuals and organizations. The sector analyses reflect current thinking on freer trade, which we discovered is not, as yet, very far advanced. This information has been distilled and compiled in reasonably succinct form, and supplemented by a comprehensive computer run of Canada-U.S. trade statistics over the last five years. Further work needs to be done, which because of its technical nature is best accomplished by a formal task force in the federal trade bureaucracy. What exists here is a preliminary attempt to address some of the issues. Hopefully this study will help to focus discussion and provide an initial analysis of some of the important probable effects of freer trade.

Further analysis of this issue in Canada is an immediate need as the U.S. is, in some ways, ahead of Canada in comprehensively assessing the impact of, and interests at stake in, free trade. Specifically, the U.S. International Trade Commission (ITC) has already held hearings at which it solicited the views of American industry on the possibility of free trade with Canada, and it is required to make a recommendation on

this subject to the U.S. administration. Canadians cannot afford complacency--we should have a clear and confident understanding of Canadian interests both for and against free trade before negotiations, should they be forthcoming, begin in earnest.

Methodology

For purposes of this study, it was necessary to categorize trade into sub-divisions. It was only by looking at sectors and sub-sectors that we can begin to assess the impact of free trade as it would affect Canadian industries, workers, and communities. The term "sector," which is commonly used in negotiation, has no fixed meaning. Its meaning ranges from a formal statistical aggregation to a marketing concept, and even to a very temporary category used in the context of a specific trade negotiation. For example, the U.S. has suggested the inclusion of the cosmetics "sector" in discussions of free trade with Canada, but this grouping is not recognized in any of the statistical compilations of Statistics Canada. Statistics Canada compiles a useful aggregation of 20 manufacturing groups, but data collected according to these categories does not provide current information on Canadian duties. As a result it was necessary to compile our own sector aggregation, using our common sense to categorize like things with like. The results of this aggregation are found in Table 1, which provides figures on Canada's trade with the U.S. and other nations for the years 1978 and 1983.

One of the major goals in compiling sector aggregations was to define categories which would collectively account for all trade, and

which could be used as the basis for computer computation of sectoral and aggregate trade balances with the U.S. and with the rest of the world for the five-year period from 1978 to 1983, as well as average duties. The results of the computer run, undertaken by Statistics Canada, are illustrated in Table 1 and in the tabular data in the studies which follow. To facilitate this exercise, our sector definitions had to be based on one of the two standard classification systems used by Statistics Canada. We chose the commodity-based Canadian International Trade Classification (CITC) classification, as opposed to the often-used SIC industry-based classification, for two reasons. First, the CITC codes facilitated comparisons of average tariff rates in the various sectors and sub-sectors, whereas SIC data did not. Second, CITC classifications promised a more valid sectoral comparison of 1978 and 1983 data. Whereas CITC-based statistics account for total trade in a given commodity, the SIC statistics account for trade by industry and hence by a reckoning of companies in that industry. However, industry composition can change over short periods of time because of shifts in corporate ownership and in the products and activities of corporations. For example, CIPA Lumber Co. Ltd. was reclassified from the wood sector to the forest industry under the SIC system after it amalgamated in 1980 with Q.C. Timber, in spite of the fact that its product did not change. Similarly, Consolidated Foods Corporation of Canada amalgamated with Fuller Brush, resulting in its reclassification from food to electrical products. The anomalous industrial comparisons which such shifts in ownership and product mix create over time are avoided by using commodity-based statistics.

Table 1

Canadian Trade Balances by Sector 1978 and 1983
(\$ Canadian Millions)

	Canadian Exports				Canadian Imports				Balance of Trade			
	1978		1983		1978		1983		1978		1983	
	U.S. 1	R.O.W. ² 2	U.S. 3	R.O.W. 4	U.S. 5	R.O.W. 6	U.S. 7	R.O.W. 8	U.S. 9(1-5)	R.O.W. 10(2-6)	U.S. 11(3-7)	R.O.W. 12(4-5)
Agriculture and Food Processing	972	3,249	1,980	6,907	1,773	1,735	2,493	2,062	(801)	1,513	(514)	4,845
Fish and Fish Products	548	424	960	612	140	108	237	182	408	316	724	429
Sundry Crude & Fabricated Materials, n.e.s.	236	857	465	1,031	786	302	1,026	372	(551)	554	(560)	659
Forestry Products	7,043	2,530	9,466	3,729	796	135	1,204	198	6,247	2,395	8,263	3,531
Metals & Minerals	5,301	3,470	7,465	4,834	2,687	1,509	4,791	2,056	2,614	1,961	2,674	2,778
Energy	5,131	903	11,400	1,373	1,392	3,047	1,932	407	3,738	(2,144)	9,468	965
Textiles, Clothing and Footwear	217	252	408	306	909	1,508	1,200	2,482	(691)	(1,256)	(792)	(2,176)
Chemicals & Petrochemicals	1,587	855	2,908	1,663	2,063	673	3,587	1,120	(477)	182	(679)	544
Machinery and Equipment	1,725	591	2,471	960	4,559	1,070	5,291	1,355	(2,833)	(479)	(2,820)	(395)
Automotive Products	11,558	1,021	20,986	733	12,091	1,219	16,916	2,334	(533)	(197)	4,070	(1,600)
Urban Transportation	23	5	125	1	26	2	66	0	(3)	3	59	1
Ocean and Marine Industries	120	135	152	182	153	91	184	602	(33)	44	(32)	(419)
Aircraft	540	264	1,390	427	779	61	1,727	87	(238)	203	(337)	330
Electronics	898	383	2,461	1,018	2,060	820	5,130	1,857	(1,163)	(437)	(2,668)	(839)
Electrical Machinery and Equipment	237	171	512	192	1,504	397	2,127	688	(1,266)	(226)	(1,614)	(495)
Furniture	114	21	373	34	182	85	188	146	(60)	(64)	185	(112)
Scientific and Medical Equipment Products	124	82	294	140	686	174	1,346	318	(562)	(92)	(1,052)	(170)
Miscellaneous Consumer Products	233	118	582	135	1,058	848	1,680	1,237	(825)	(730)	(1,098)	(1,102)
Other End Products and Special Transactions	702	326	1,913	501	1,746	863	2,936	1,148	(1,043)	(537)	(1,024)	(647)
Total ³ - All Sectors	37,372	15,811	66,333	24,631	35,433	14,675	54,103	21,483	1,939	1,136	12,229	3,148

1 Data supplied by Statistics Canada, External Trade Division.

2 Rest of World.

3 Total includes small residuals for each trade category.

As with all necessary compromises, the use of CITC sector definitions resulted in some difficulties. First, for reasons described above, there are discrepancies between our sectoral trade statistics and those used by industry and government sources which are based on SIC numbers. This is the case in the electrical products sector, for example, where the SIC-based trade statistics used by the Electrical and Electronics Manufacturers Association of Canada yield higher totals of both exports and imports than the CITC-based statistics. Furthermore, our concern that the sector aggregations should collectively account for no more and no less than the total of Canadian trade is not shared by those interested mainly in individual sectors. Thus, for example, the aerospace, and ocean and marine industries include in their own reckonings many firms which produce electronic components. Since we could not list these products twice, we chose to include them all in the electronics sector definition, making our aircraft and ocean and marine definitions in some ways unsatisfactory to those industries.

A similar problem was encountered in defining products fabricated from petrochemicals. Many plastic and rubber products which that industry would include in its trade figures are in fact intermediate inputs in the production of such items as automobiles, cookware, and other end products. Thus, for example, General Motors (GM) is the largest fabricator of plastics products in the country, yet the plastics products it uses are included in the automotive sector. In general, the commodity-based definitions allocate many end products of the predominantly crude and fabricated material sectors elsewhere, with no particular pattern to these reallocations.

Other problems with our definitions are more unique to individual sectors. In defining our ocean and marine sector, we included exports of drilling rig equipment and supplies. A small amount of this equipment is traded to the U.S., but a relatively huge amount is traded offshore to the "high seas" and, because it does not wind up in another country, is classified as a non-trade item. Much of the Canadian production of these products is in fact sold to American companies; however, since it remains offshore, it is never included in Canada-U.S. trade statistics. Also in the ocean and marine sector, there is a problem accounting for the very significant trade in ship repairs. While imports of ship repair work--i.e., work done by foreign yards on Canadian ships--are accounted for by virtue of the duty which is charged to Canadian ship owners for this work, exports of ship repairs--repair work on foreign ships in Canadian yards--are not recorded because there are no bills of lading or export documentation on which such records could be based. This is an important problem given the great significance of ship repair work to the industry.

Finally, the urban transit sector poses a special definitional problem. Because it is more a marketing strategy for producers of a variety of products than an industrial classification, its products are subsumed in a large number of commodity classifications, and it is virtually impossible to break out accurate descriptive statistical information from CITC categories. In some major product areas, like vehicle production, numerical information is not available from Statistics Canada because there are only five major vehicle producers, and its confidentiality rules prohibit publication of numbers where the performance of individual firms might be discerned.

These are some of the difficulties faced in constructing sector definitions from CITC numbers. The resulting statistics are less than wholly satisfactory to representatives of several sectors, but they have the virtue of facilitating an aggregate look at Canadian trade which, it was felt, justified the anomalies. Our sector definitions are outlined, by CITC code numbers, as appendices to each of the sector studies which follow. With this information the statistical analysis can be replicated.

In addition to the tabular data furnished by the computer run, the Commission's sector analyses are based on a variety of other sources. Most important among these were personal interviews: on average, Commission researchers conducted at least two personal interviews per sector with industry and government representatives, and numerous telephone consultations. In all, over thirty interviews were conducted. In addition, researchers utilized industry briefs to the Commission, sector analyses by the Departments of Industry, Trade and Commerce and Regional and Industrial Expansion, corporate annual reports, journal and newspaper articles, etc., in preparing the sector reports. It is hoped that the results will prove to be informative, and a stimulant to further study.

B. Substantive Issues

(i) Trade

Trade accounts for some 30 per cent of Canada's Gross Domestic Product. Roughly three-fourths of this trade is with one country, the

United States. Canada-U.S. trade is central to Canadian welfare, and trade policy toward the United States is the most important aspect of Canadian trade policy overall.

The most recent trade data available to the Commission is summarized in Table 2. The figures indicate a slight relative increase in Canada's trade with the U.S. in 1983 over 1978, which was the peak year for Canada-U.S. trade in the 1970s. These figures would indicate that the recession of the early 1980s and its aftermath deepened Canada's reliance on the U.S. at the expense of trade relationships elsewhere. Current trade figures indicate a continuation of this trend with the U.S. accounting for over 75 per cent of Canadian exports and imports in 1984. The positive side of this relationship is that, as evident from Table 1, the U.S. takes far higher percentages of Canada's fabricated and manufactured end products than other countries. The negative side of this relationship, however, is that the natural flow of Canadian exports has made Canada dependent on the American marketplace, and more importantly, on the trade policies of the U.S. government which ultimately controls access to that marketplace.

Changes in Canada-U.S. trade from 1978 to 1983 can be seen more clearly in Table 3. The data for 1978 have been adjusted to take account of inflation. The figures in Table 3 confirm Canada's weakness, as measured by trade balances, in all manufacturing sectors except automobiles. In 1983, there were large negative balances, i.e. over \$1 billion, in machinery, electronics, electrical machinery, scientific equipment and consumer products. These balances did include, however,

Table 2
Canadian Trade with U.S. and World, 1978 and 1983
 (\$ Canadian millions)

	1978			1983		
	U.S.	R.O.W.*	Total	U.S.	R.O.W.	Total
Exports	37,372 (70%)	15,811 (30%)	53,183 (100%)	66,333 (73%)	24,631 (27%)	90,964 (100%)
Imports	35,433 (71%)	14,675 (29%)	50,108 (100%)	54,103 (72%)	21,483 (28%)	75,587 (100%)
Trade Balance (Exports - Imports)	1,939 (63%)	1,136 (37%)	3,075 (100%)	12,229 (80%)	3,148 (20%)	15,377 (100%)
Trade Turnover (Exports + Imports)	72,804 (70%)	30,486 (30%)	103,290 (100%)	120,436 (72%)	46,115 (28%)	166,550 (100%)

*R.O.W. = Rest of the World

Source: Statistics Canada, External Trade Division

Table 3
Canadian Trade Balances by Sector 1978 and 1983¹
(\$ Canadian Millions; 1983 Dollars)²

	Exports				Imports				Balance of Trade					
	1978		1983		1978		1983		1978		1983		Change from 1978-83	
	U.S. 1	R.O.W. ³ 2	U.S. 3	R.O.W. 4	U.S. 5	R.O.W. 6	U.S. 7	R.O.W. 8	U.S. 9(1-5)	R.O.W. 10(2-6)	U.S. 11(3-7)	R.O.W. 12(4-8)	U.S. 13(11-9)	R.O.W. 14(12-10)
Agriculture and Food Processing	1,536	5,133	1,980	6,907	2,801	2,741	2,493	2,062	(1,265)	2,390	(514)	4,845	751	2,455
Fish and Fish Products	866	670	960	612	221	171	237	182	645	499	724	429	79	(70)
Sundry Crude & Fabricated Materials, n.e.s.	373	1,354	465	1,031	1,242	477	1,026	372	(870)	875	(560)	659	310	(216)
Forestry Products	11,126	3,997	9,466	3,729	1,258	213	1,204	198	9,869	3,784	8,263	3,531	(1,606)	(253)
Metals & Minerals	8,374	5,482	7,465	4,834	4,245	2,384	4,791	2,056	4,130	3,098	2,674	2,778	(1,456)	(320)
Energy	8,106	1,427	11,400	1,373	2,199	4,814	1,932	3,232	5,905	(3,387)	9,468	(1,859)	3,563	1,528
Textiles, Clothing and Footwear	343	398	408	306	1,436	2,382	1,200	2,482	(1,092)	(1,984)	(792)	(2,176)	300	(192)
Chemicals & Petrochemicals	2,507	1,351	2,908	1,663	3,259	1,063	3,587	1,120	(754)	288	(679)	544	75	256
Machinery and Equipment	2,725	934	2,471	960	7,202	1,690	5,291	1,355	(4,476)	(757)	(2,820)	(395)	1,656	362
Automotive Products	18,259	1,613	20,986	733	19,101	1,926	16,916	2,334	(842)	(311)	4,070	(1,600)	4,912	(1,289)
Urban Transportation	36	8	125	1	41	3	66	0	(5)	5	59	1	64	(4)
Ocean and Marine Industries	190	213	152	182	242	144	184	602	(52)	70	(32)	(419)	20	(489)
Aircraft	853	417	1,390	427	1,231	96	1,727	87	(376)	321	(337)	339	39	18
Electronics	1,419	605	2,461	1,018	3,254	1,295	5,130	1,857	(1,837)	(690)	(2,668)	(839)	(831)	(149)
Electrical Machinery and Equipment	374	270	512	192	2,376	627	2,127	688	(2,000)	(357)	(1,614)	(495)	386	(138)
Furniture	180	33	373	34	286	134	188	146	(109)	(101)	185	(112)	294	(11)
Scientific and Medical Equipment Products	196	130	294	140	1,084	275	1,346	318	(888)	(145)	(1,052)	(179)	(164)	(34)
Consumer Products	368	186	582	135	1,671	1,340	1,680	1,237	(1,303)	(1,153)	(1,098)	(1,102)	205	51
Other End Products and Special Transactions	1,109	515	1,913	501	2,758	1,363	2,936	1,148	(1,648)	(848)	(1,024)	(647)	624	201
Total ⁴ - All Sectors	59,039	24,978	66,333	24,631	55,976	23,183	54,103	21,483	3,063	1,795	12,229	3,148	9,166	1,353

1. Data supplied by Statistics Canada, External Trade Division.

2. GNE Deflator: 1971 = 100; 1978 = 183.8; 1983 = 290.5. Reference: Statistics Canada Catalogue #13-001, Table 21.

3. Rest of World.

4. Total includes small residuals for each trade category.

strong export increases such as that found in the machinery and equipment sector. Trade balances from 1978 to 1983 generally improved in most manufacturing sectors. This is particularly true for trade with the United States, which showed improvement in all manufacturing sectors except electronics and scientific and medical equipment. In automotive products Canada had an export surplus with the U.S. of over \$4 billion in 1983. This uncharacteristically strong showing is due mainly to the resurgence of sales of medium to large autos in the U.S., in which Canada has strong productive capacity.

Table 3 also confirms the resource-based nature of Canada's exports. Canada continues to have large export surpluses with the U.S. in sectors such as fish products, forestry products, metals and minerals and energy. The most dramatic change occurred in the energy sector, with increased sales of electricity, natural gas and petroleum derivatives to the United States, and increased coal exports to other countries. Canada achieved a real increase in exports of over \$5 billion in the energy sector between 1978 and 1983. Agricultural exports also showed strong growth, and wheat sales outside North America were the biggest factor. However, exports of forestry products and metals and minerals declined relatively between 1978 and 1983. While these sectors remain important to Canadian trade, current indications suggest they may not grow much in the future.

Finally, sectoral exports to the U.S. are presented on a regional basis in Table 4 and Table 5. These tables confirm that the majority of manufactured exports originate in Ontario, and secondarily Quebec, while

Table 4
Regional Distribution of Exports to the USA by Sector, 1983
(Thousand of Canadian dollars)

Sector	Atlantic	Quebec	Ontario	Prairies	Pacific	Total - Region of Lading
Agricultural and Food Processing	93,803	503,011	922,830	289,410	134,438	1,943,492
Fish and Fish Products	783,218	51,159	42,886	26,145	50,488	953,896
Sundry Crude and Fabricated						
Materials n.e.s.	12,539	110,029	170,557	140,870	18,162	452,157
Forestry Products	620,538	2,692,364	2,525,401	494,979	3,126,569	9,459,850
Metals and Minerals	65,966	2,378,677	4,258,136	1984,448	462,462	7,359,689
Energy	421,720	480,063	1,582,142	8,289,555	625,827	11,399,307
Textiles, Clothing and Footwear	6,105	162,035	182,918	19,570	11,788	382,415
Chemicals and Petrochemicals	28,732	349,943	1,468,432	918,340	102,674	2,868,121
Machinery and Equipment	21,482	211,256	1,424,567	269,402	125,451	2,052,159
Automotive Products	38,481	1,469,373	19,047,498	105,531	65,238	20,726,126
Urban Transportation	-	32,435	56,198	35,056	46	123,735
Ocean and Marine Industries	1,868	56,683	71,830	634	14,546	145,561
Aircraft	2,538	699,267	397,628	69,673	16,791	1,185,897
Electronics	3,989	524,160	1,362,528	115,159	46,903	2,052,739
Electrical Machinery and Equipment	1,072	73,467	366,706	24,989	10,405	476,639
Furniture	464	78,497	267,158	10,063	11,247	367,429
Scientific and Medical Equipment	6,086	35,315	154,379	16,906	8,539	221,116
Consumer Products	5,424	224,510	261,480	9,171	17,259	517,844
Other End Products and Special Transactions	204,006	233,114	1,228,110	82,777	70,558	1,818,565
Total - All Sectors	2,318,889	10,368,503	35,798,762	11,116,417	4,925,125	64,527,697

Source: Statistics Canada - External Trade Division Annual (Raw Customs Basis), 1983.

Table 5
Regional Distribution of Exports to the USA by Sector, 1978
(Thousand of Canadian dollars)

Sector	Atlantic	Quebec	Ontario	Prairies	Pacific	Total-Region of Lading
Agricultural and Food Processing	20,474	239,406	436,108	171,977	74,621	942,586
Fish and Fish Products	434,229	28,500	22,275	20,672	38,233	543,909
Sundry Crude and Fabricated						
Materials n.e.s.	11,545	64,759	85,849	54,722	13,697	230,572
Forestry Products	547,280	1,683,074	1,454,337	360,748	2,994,786	7,040,224
Metals and Minerals	74,081	1,917,013	2,623,086	157,251	464,812	5,236,244
Energy	210,461	52,677	562,783	3,825,984	465,697	5,117,601
Textiles, Clothing and Footwear	1,580	87,216	88,727	11,603	12,388	201,514
Chemicals and Petrochemicals	18,337	164,419	764,764	588,841	35,734	1,572,095
Machinery and Equipment	40,823	147,661	1,078,256	169,097	115,411	1,551,247
Automotive Products	24,654	780,414	10,526,898	47,635	72,525	11,452,125
Urban Transportation	-	4,818	12,950	4,123	357	22,247
Ocean and Marine Industries	36,008	31,537	38,976	198	11,513	117,231
Aircraft	2,093	261,551	166,358	27,383	13,543	470,928
Electronics	17,708	164,532	567,592	10,670	14,094	774,596
Electrical Machinery and Equipment	918	39,986	163,202	8,937	5,593	218,636
Furniture	110	29,490	77,625	1,901	2,438	101,902
Scientific and Medical Equipment	1,978	13,128	78,630	4,732	3,434	101,902
Consumer Products	2,234	100,584	92,422	4,519	11,527	211,286
Other End Products and Special Transactions	110,574	120,899	373,735	39,060	28,240	672,708
Total - All Sectors	1,554,875	5,972,596	19,231,535	5,510,609	4,381,602	36,651,216

Source: Statistics Canada - External Trade Division Annual (Raw Customs Basis), 1978.

the other regions are critically dependent on resource-based sectors such as fish, forestry products and energy. The tables also point out the relative importance of the chemical and petrochemical sector to the Prairies, and of the aircraft sector to Quebec. It is frequently asserted that in the event of freer trade with the U.S., the greatest costs of adjustment would be experienced in the manufacturing regions of Ontario and Quebec. From these tables it would appear that such benefits as might accrue to Canadian industry would also be mainly derived in Ontario and Quebec, because that is where exports of manufactured goods originate.

(ii) Protectionism

Protectionism in Canada as in any nation is essentially of two kinds: tariffs and non-tariff barriers (NTBs). On tariffs the position between Canada and the U.S. is unbalanced: by 1987, U.S. average tariffs on dutiable imports will be 5.5 per cent (on Canadian exports it will be 1 to 2 per cent), while Canadian average tariffs on dutiable imports will be 9 to 10 per cent. In both countries averages obscure duties that are much higher on individual products. It is probable that tariff protection has a greater impact on the Canadian economy than on the U.S. economy, not only because of average levels of duties, but also because of the nature of that protectionism. For example, some Canadian tariffs, particularly on machinery products, are applied only if the product is also made in Canada. This practice can create considerable uncertainty for Canadian importers of U.S. products, and it serves to extend tariff protection automatically for newly-developed products

whether that protection is needed or not. In other words, there is a presumption of protectionism in this important manufacturing sector.

A presumption of protectionism can be observed throughout the Canadian tariff schedule. It is inherently difficult to compare tariff schedules between nations, but one way to approximate a comparison is to examine "basket category" rates of duty. Tariff schedules are historical documents designed to be around a long time, and as they have developed over time they have included basket categories that were intended to incorporate and provide protection for products not yet developed or classified. Basket rates thus indicate a base level of protection, which might be adjusted upward or downward when a specific product is classified. A sample of Canadian and U.S. basket rates is provided in Table 6.

Table 6 demonstrates that the Canadian rates are consistently and in some cases substantially higher than their U.S. counterparts. The higher Canadian basket rates are a legacy of Canada's National Policy of 1879, and they demonstrate the presumption of protection that is accorded manufacturing in Canadian trade policy. While Canadian tariffs are generally higher than those in the U.S., there are many exceptions to this generalization which would have an important bearing on the adjustment to freer trade. Some Canadian sectors already operate effectively free of any tariff protection. These include the auto sector, where trade is governed by a bilateral agreement; the fish products sector, where Canada has an unquestioned comparative export advantage; and the aircraft sector, where trade is largely governed by a

Table 6

A Comparison of Canadian and U.S. Basket Category Tariff Rates

PRODUCT	CANADIAN RATES			COMPARABLE U.S. RATES		
	Tariff Line Item	Canadian Tariff		U.S. Tariff		Tariff Line Item (TSIS)
		1983	1987	1983	1987	
Manufacturers of wood, n.o.p.	50600-1 MFN line 46	12.1%	9.2%	6.6%	5.1%	207.00
Manufacturers of iron or steel, n.o.p.	44603-1 MFN line 29	13.9%	10.2%	7.6%	5.7%	657.25
Manufacturers of aluminum, n.o.p.	35400-1 MFN line 29	13.9%	10.2%	7.6%	5.7%	657.40
Paper and paperboards of all kinds, n.o.p.	19700-1 MFN line 46	12.1%	9.2%	6.9%	5.3%	256.902
Manufacturers of glass, n.o.p.	32615-1 MFN line 29	13.9%	10.2%	9.6%	6.6%	548.05
Articles or materials of plastics, n.o.p.	93907-1 MFN line 230	15.5%	13.5%	6.9%	5.3%	774.55
Machinery, n.o.p.	42700-1 MFN line 46	12.1%	9.2%	4.4%	3.7%	678.50

Notes:

1 n.o.p. = not otherwise provided for

2 In addition to paper and paperboard, U.S. category includes articles of pulp and papier-mâché.

Source: Canadian Tariff.

Dept. Tariff Schedule United States.

multilateral sectoral agreement. In these sectors freer trade with the U.S. would not have a great impact. Even in the fishing sector, where the U.S. maintains some protectionist measures, it tends to be the availability of the resource rather than the level of trade barriers that influences trade flows. At the other extreme are sectors where Canadian tariff protectionism is high, such as furniture where tariffs now average around 15.5 per cent, or textiles and apparel, where average duties are around 20 per cent. One would expect freer trade to entail higher adjustment costs in these sectors, although in some cases such as furniture, the current strong position of exports suggests parts of the sector could bear those adjustment costs.

With regard to protection from non-tariff barriers (NTBs), the position between Canada and the U.S. is reversed. Both Canada and the U.S. have NTBs, but the U.S. has used these practices more than Canada, particularly safeguard, countervailing and anti-dumping duties, administrative regulations, and preferential government procurement (such as Buy America requirements). Furthermore the impact of U.S. NTBs on Canada is greater than the impact of Canadian NTBs on the U.S. Analysis at the sectoral level indicates that while some categories of Canadian exports such as furniture or hardware and hand tools do not face U.S. NTBs, most Canadian sectors are burdened by these restrictions. One of the most common NTBs applied by the U.S. is the safeguard provision, known as an Article 201 action under the U.S. Trade Act of 1974. Under this provision, quotas or additional duties can be placed on foreign imports if those imports are deemed to be causing injury to competing U.S. producers. Such an action was attempted

recently against Canadian copper exports but was vetoed by the U.S. President largely because of pressure from domestic users of imported copper. Other NTBs include customs classification procedures which are a particular problem in the textile, clothing and footwear sector. There are many U.S. tariff items in this sector and U.S. officials have considerable leeway in classifying imports for purposes of applying duties, with the result that uncertainty is created for Canadian exporters.

Another source of uncertainty is U.S. countervailing duty legislation, which particularly affects Canadian resource-based sectors which may have benefitted from time to time from regional or other subsidies in Canada. The Canadian softwood lumber industry recently faced a countervail suit and while the Canadian position prevailed in the proceedings, it nevertheless entailed a long and costly legal battle for the Canadian industry. A similar experience may be faced in the Canadian fishing industry, for a late-1984 report of the U.S. International Trade Commission claimed that Canada had provided subsidies to producers, particularly in the Maritime provinces. As a result of U.S. countervailing practices, Canadian exporters to the U.S. can become subject to costly legal proceedings that are beyond their control. The effect is to make investors, either Canadian or foreign, hesitate to invest in Canada, particularly if those investments will result in product exports to the United States. Of course, such exports are normally required for the efficient operation of any large scale modern plant located in Canada.

Finally, preferential U.S. government procurement practices represent the most troublesome trade barrier to sectors exporting large capital goods, such as the electrical machinery, electronics and machinery sectors. For example, Canadian firms like Bombardier have been required to locate plants in the U.S. to sell products in that country. Government procurement practices also affect more consumer-oriented sectors, as evidenced by the Berry Amendment pertaining to the purchase of textiles by the U.S. Department of Defence, and by the extensive legislation at the state and local levels stipulating domestic preferences for purchases of clothing and footwear. Thus in summary, analysis at the sectoral level showed Canadian exporters are affected extensively by a wide variety of U.S. non-tariff protectionist measures.

There are also Canadian NTBs. Curiously, while these are intended to grant advantage to Canadian interests, in some cases apparently they have had the opposite effect. Consider, for example, the urban transit sector. The major NTBs in Canada are provincial, since urban transit is a provincial responsibility. All provincial governments have local or Canadian preferential purchasing policies. Quebec, for example, has a 45 per cent Quebec content requirement, while Ontario gives a 10 per cent preference to its own companies. Flyer of Manitoba is effectively shut out of Quebec; hence GM, with its plant in Quebec, will not sell any buses in Manitoba. Often provincial governments will procure from in-province producers on a non-competitive basis, while rejecting lower bids from out-of-province producers. These provincial policies have fragmented the Canadian market, and have inhibited the capacity of Canadian companies to collaborate and bid on large foreign

projects. They have also led in some cases to undue competition between Canadian companies in foreign markets.

To sum up, previous tabular data confirm generally the traditional picture of Canada as an exporter of resource-based products and an importer of manufactured goods. Consequently, it was expected the sector studies would reflect consistent underlying strength in resource sectors, and as well would reveal consistent weakness in manufacturing industries operating behind tariff walls. Such expectations, however, were not entirely confirmed. Instead, as the following studies will reveal, there were substantial areas of strength in Canada's manufacturing performance. Instead of consistency, the studies found diversity in industrial performance, and in the patterns of likely adaptation to freer trade with the U.S.

AGRICULTURE AND FOOD PROCESSING

Description

The agri-food industry is the largest of the manufacturing industries in Canada. Retail sales for 1983 reached \$60 billion. Approximately one-sixth of the total economy of Canada is accounted for by the agri-food sector. In terms of employment, 1.4 million people work in this sector. If indirect labour is included (i.e., farm production and retailing), the total would be 3 million, or 18 per cent of the Canadian labour force. Total industry employment is dispersed across Canada in approximate proportion to population distribution. Most is concentrated in Ontario (about 75 per cent); 15 per cent is located in Quebec; and the remainder is in the West and the Maritime provinces. Such distribution is not typical of manufacturing in Canada generally and as a result, the agri-food industry accounts for almost a quarter of total manufacturing employment in the Prairies and an even greater proportion in the Maritime provinces.

In terms of importance to the overall sector, the meat processing sub-sector has the highest number of shipments and employees. In 1981, for example, it had \$7.6 billion in shipments, and currently employs over 35,000 people. The sales performance in the meat industry has fluctuated quite drastically in recent years. In 1978, sales were up 29.4 per cent over 1977; 1979 sales increased by 19.4 per cent; 1980 gains were only 3.6 per cent; and in 1981, the increase was 10.9 per cent. Most of the 75 plants of Canadian Meat Council members are quite

small, but they account for 80 per cent of federally-inspected production.

The processed fruit and vegetable industry ranks highly within the industry in terms of export trade and total employees. In 1982, this industry employed 17,044 employees and had an export trade of \$134 million. The seasonality of agricultural production is of vital importance in the processed fruit and vegetable industry since a plant that may employ over 400 seasonal workers may have as few as 10 workers year round.

Most of the primary industry (i.e., agriculture) is Canadian-owned. Likewise, the meat slaughtering and packing industry is almost entirely Canadian-owned. Examples of Canadian-owned food processing firms include McCain's, Cavendish Farms (owned by Irwin), and York Farms, which is a part of Canada Packers. The processing industry, on the other hand, has a high degree of foreign ownership. Sixty per cent of canning/preservation and 40 per cent of frozen food production is foreign-owned. Most of the foreign firms are American. Examples of foreign-owned companies operating in Canada are Kraft, Del Monte, Carnation (which has been acquired by Nestlé's), Green Giant, and Libby's.

Although the sector is often divided into a number of sub-sectors, our definition consists of two main categories: agriculture* and

* Includes livestock; grains and oilseeds; and fruits and vegetables.

processed food.* This definition was extracted from Statistics Canada CITC categories and the figures are those which are generally used (with small variations) by industry and government.

The agriculture and food processing sector is very diverse and as such, generalizations are difficult, especially vis-à-vis free trade with the U.S. There are, however, a number of factors which are common to the sector and which make it distinct. First of all, the sector is very vulnerable to climatic variations. Climate is important to the food industry since Canada's shorter growing season restricts the variety of crops which can be grown, and potentially causes higher costs and lower incomes for both producers and processors relative to their U.S. counterparts. Secondly, there is a high degree of interdependence between the agriculture and processed food sub-sectors. Without the agricultural sector, most processing enterprises would be unable to operate. Similarly, agricultural producers depend on the processing industry to buy their fresh livestock and produce. Finally, the industry is distinctive because it has an impact on the lives of all Canadians. Government policies and programs with respect to the agriculture and food processing sector greatly affect the nutrition and health of the Canadian public, as well as the prices they pay for food.

* Includes slaughtering, meat and poultry processing; dairy products; flour and cereal products, including bakery products; fruit and vegetable processed products, including sugar processing; beverages; feed industry; and miscellaneous food processors, nes.

Trade and Protectionism

Canada has a huge volume of export trade in agriculture and food processing, making it a crucial element of the Canadian economy. Total Canadian exports for 1983 reached \$88.6 billion. Of this, \$9.5 billion was accounted for by the agriculture and food processing sector.* Approximately half of the sector's income comes from exports. Table 1 illustrates the volume of trade between Canada and the U.S. which in 1983 represented some \$2 billion in exports and \$2.5 billion in imports.

The most fundamental distinction within this sector is between agriculture and food processing. Canadian trade in primary agricultural products accounted for just over one-third of the total trade in agriculture and food processing in 1983. Trade in agriculture was also entirely responsible for Canada's large overall trade deficit in the total sector in 1983: the agriculture deficit was \$671 million, while the overall deficit was \$513 million, indicating a substantial surplus on the food processing side. Within the agricultural sub-sector, livestock had a surplus of \$167 million in 1983, while grains ran a relatively small deficit of \$54 million. The huge deficit is almost entirely accounted for by the \$784 million deficit in fruits and vegetables, which in turn would be largely accounted for by the seasonality of the Canadian industry. However, overall, the agricultural deficit decreased by \$110 million between 1978 and 1983.

* This figure does not include wines and liquors.

Table 1
Canadian Trade with the United States, 1978 and 1983:
Agriculture and Food Processing Sector

(\$ Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	1978 ¹	1978 ²	1983	1978 ¹	1978 ²	1983	1978 ²	1983
Agriculture Sub-Sector:	238,353	376,545	463,009	735,243	1,161,521	1,134,165	(784,976)	(671,156)
Livestock	164,801	260,349	270,101	55,356	87,450	102,965	172,899	167,136
Grain & Oilseeds	22,841	36,084	70,753	96,416	152,316	124,462	(116,232)	(53,709)
Fruits & Vegetables	50,710	80,111	122,155	583,471	921,755	906,737	(841,644)	(784,582)
Slaughtering, Meat, & Poultry Processing	121,738	192,319	433,218	189,863	299,941	159,126	(107,622)	274,092
Dairy Products & Eggs	13,281	20,981	21,463	28,158	44,483	26,377	(23,502)	(4,914)
Flour & Cereal Products, incl. Bakery Products	64,341	101,645	135,998	51,107	80,738	108,101	20,907	27,897
Fruit Processed Products	20,354	32,155	22,771	162,505	256,722	208,795	(224,567)	(186,024)
Veg. Processed Products	12,618	19,934	46,188	61,276	96,803	78,678	(76,869)	(32,490)
Sugar Processing	64,467	101,844	114,179	42,758	67,548	83,824	34,296	30,355
Coffee, Tea, Cocoa & Choc.	23,645	37,354	34,703	157,762	249,229	156,156	(211,875)	(121,453)
Non-Alcoholic Beverages	666	1,052	6,711	2,872	4,537	7,460	(3,485)	(749)
Alcoholic Beverages	309,472	488,897	486,781	28,243	44,618	31,224	444,279	455,557
Feed Industry	60,516	95,602	120,427	143,714	227,036	201,951	(131,434)	(81,524)
Misc. Food Processors, nes	42,584	67,273	94,285	169,915	268,428	297,271	(201,155)	(202,986)
Total: Agricultural and Food Processing Sector	972,036	1,535,602	1,979,734	1,773,415	2,801,604	2,493,128	(1,266,002)	(513,394)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars.
2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

The figures for the food processing sub-sector reveal a very different situation. Here, a \$480 million deficit in 1978 was turned into a \$158 million surplus in 1983.* It is this strong processing performance which is responsible for the decrease in the overall agriculture and food processing deficit by \$753 million. This strong processing performance is in turn accounted for in large measure by the extremely strong performances of two sub-sectors: the alcoholic beverage sub-sector, which registered approximately \$450 million in trade in both 1978 and 1983; and the slaughtering, meat and poultry processing sub-sector, which turned a \$108 million deficit into a \$274 million surplus. Also contributing to the lower overall deficit was a \$90 million decline in imports of coffee, tea and cocoa. This remarkable performance has not gone unnoticed in the United States: the Canadian hog industry is currently under review for alleged unfair trading practices in Washington.

Table 2 reviews the levels of Canadian tariffs on a sub-sector by sub-sector basis. As one would expect, tariffs in the primary agricultural sector are quite low, the average being raised substantially by high fruit and vegetable tariffs which are applied seasonally to encourage import substitution when Canadian produce is in season.

* These figures were calculated by adding the trade balances for the food processing sub-sectors.

Similarly, in the food processing industry, average tariffs are relatively low. In this grouping, the average is raised particularly by tariffs in the sugar processing industry (13.1 per cent), the tobacco industry (within the miscellaneous food processors category) and, most substantially, by the alcoholic beverages industry (34 per cent). In the case of some sub-sectors, low tariffs mask a domestic market which is highly protected through marketing board regulation - notably of dairy products and poultry.

It is noteworthy that agriculture and food processing tariffs have not historically been subjected to substantial, across-the-board tariff reductions. The pattern varies, but high tariffs seem as likely as low tariffs. This reflects the item-by-item approach which has been a feature of agricultural negotiations in the GATT. This approach has allowed tariffs on certain sensitive items to be reduced only marginally or not at all. Since tariffs are not a major protective device employed by the EEC (they use variable import levies, largely), most of Canada's agricultural tariff negotiations have historically been with the U.S.

Table 3 lists comparative Canadian and American tariffs on a number of common agricultural and processed food products. While not all items are easily comparable because of different tariff criteria, most are fairly compatible. The table shows generally that there is a high degree of congruency between Canadian and American products. Live animal and meat packing industry tariffs in cattle and hogs are highly comparable, with only a few differences which aggravate relations between the two national industries, and which are not illustrated in

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Agriculture and Food Processing Sector

(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4)+(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Agriculture Sub-sector	735,243	1,134,165	453,911	773,661	281,332	360,504	17,655	20,224	6.3	5.6
Livestock	55,356	102,965	612	6,204	54,743	96,761	1,763	2,126	3.2	2.2
Grain & Oilseeds	96,416	124,462	16,213	17,115	80,203	107,347	1,626	1,237	2.0	1.2
Fruit & Vegetables	583,471	906,737	437,085	750,342	146,386	156,326	14,266	16,861	9.8	10.8
Slaughtering, Meat & Poultry Processing	189,863	159,126	6,573	49,586	183,290	109,539	4,051	4,106	2.2	3.8
Dairy Products & Eggs	28,158	26,377	390	382	27,768	25,995	993	1,281	3.6	4.9
Flour & Cereal Products, incl. Bakery Products	51,107	108,101	7,736	16,099	43,370	92,002	4,047	7,210	9.3	7.8
Fruit Processed Products	162,505	208,795	30,571	81,309	131,934	127,486	7,857	7,844	6.0	6.2
Vegetable Processed Products	61,276	78,678	1,884	9,970	59,392	68,708	5,321	8,562	9.0	12.5
Sugar Processing	42,758	83,824	8,181	14,448	34,577	69,376	5,321	9,094	15.4	13.1
Coffee, Tea, Cocoa & Chocolate	157,762	156,156	105,407	81,710	52,354	74,445	1,439	1,725	2.8	2.3
Non-Alcoholic Bev.'s	2,872	7,460	163	161	2,709	7,299	199	902	7.4	12.4
Alcoholic Beverages	28,243	31,224	9,340	8,964	18,903	22,261	5,783	7,766	30.6	34.0
Food Industry	143,714	201,951	120,378	170,466	23,337	31,485	1,595	1,841	6.8	5.9
Misc. Food Processors, nes	169,915	297,271	67,901	145,840	102,014	151,431	14,351	24,555	14.1	16.2
Total: Agriculture & Food Processing Sector	1,773,415	2,493,128	812,435	1,352,596	960,980	1,140,531	68,952	95,110	7.2	8.3

Statistics Canada, External Trade Division, 1984.

this table. The most noteworthy irritant is the U.S. tariff on choice or prime cuts of beef - aimed at the restaurant/hotel market especially - which is 4 per cent ad valorem, while the Canadian tariff is 3¢ per pound. Given that these cuts are worth approximately \$5 per pound, the U.S. tariff translates to a level of approximately 20¢ a pound.

Another exception to the general comparability in meat tariffs is in canned meats, where the example of canned beef shows a 12 per cent difference in tariff rates. The volume of trade is relatively insignificant compared to the total trade in meat products, but the tariff difference is nonetheless remarkable. A government official asserts that if the tariffs were equalized, Canadian canned meat producers would be out of business in short order, because they simply cannot match American production runs and general efficiency.

The substantial difference in tariffs on butter is accounted for by the fact that the Canadian dairy industry is highly protected and regulated by marketing board regimes, which are likely to be untouchable. Thus, due to highly protective import quotas, tariffs are irrelevant and have never featured strongly in trade negotiations. The difference in wheat tariffs is irrelevant as well, since both nations are large exporters, but their primary markets are not within North America. Tariffs on alcohol are always high, and in Canada alcohol availability and price are very much subject to provincial regulation and policy.

Table 3

**Selected Products in the Agriculture and Food Processing Sector:
Canadian and United States Tariffs, 1984**

Product (American Description)	Canadian Tariff	American Tariff
Cattle between 200 & 700 lbs.	1¢/lb. (all cattle)	1¢/lb.
Wheat for consumption	12¢/bu. (all wheat)	21¢/bu. of 60 lbs.
Potatoes, not over 114,000,000 lbs.	35.9¢/100 lbs.	36¢/100 lbs.
Canned beef	15%	3% a val.
Cattle meat, fresh, chilled or frozen	2¢/lb.	2¢/lb.
Butter, & fresh or sour cream containing over 45% butterfat	12¢/lb. (butter only)	5.6¢/lb.
Tomato paste & sauce	13.6% (paste)	13.6%
Apples, fresh, prepared or preserved	Free	Free
Cherries, in air tight or watertight containers	5¢/lb. of drained weight but not less than 12.5%	1¢/lb.
Honey	1.5¢/lb.	1¢/lb.
Coffee, crude, roasted or ground, with or without caffeine	2¢/lb. (roasted or ground)	Free
Still wines produced from grapes, containing not over 14% alcohol by volume	20¢/gallon (not over 24% alcohol)	37.5¢/gallon (containers not over 1 gallon) 62.5¢/gallon (containers over 1 gallon)
Irish & Scotch whiskey in containers each holding not over 1 gallon	31.3¢/proof gallon (all whiskey)	31¢/proof gallon
Cigarette leaf, not stemmed leaf, oriental or turkish type, not over 8.5 inches in length	11¢/lb. (Turkish leaf only)	11.5¢/lb.

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Tariff Journal, United States of America, No.21 (16th edition), 1983-84.

Thus, aside from these exceptional products, the table demonstrates that agricultural and food processed products in the two countries enjoy very similar levels of protection.

The people associated with the agriculture and food processing sector feel that American non-tariff barriers are a major hindrance to the industry. The Canadian Food Processors Association argues that there are insufficient Canadian NTBs when compared with the United States. Canadian NTBs include grades, standards, and "fancy choice" labels.* The demand for two-language labelling, for instance, is considered by some to be a minor NTB. For the meat industry, NTBs are usually associated with inspection and inspection requirements. In the dairy industry, Canada has import controls on virtually all dairy products. Cheese, for example, has an import quota. In the case of butter, an import licence is required but this can only be obtained by the Dairy Commission. Since the Commission does not import butter, none is allowed to enter the country. Likewise, import permits are required for wheat, oats, and barley and supply managed commodities (i.e., eggs and poultry). Imports of margarine are completely prohibited.

* Grades, quality, health and sanitary requirements, labelling, etc. are not really considered NTBs in the GATT sense provided their specifications apply equally to domestic and imported product and do not have an arbitrary or unjustifiable trade distorting effect. For those in the industry, however, these factors were considered very important barriers to the flow of trade between Canada and the U.S.

The Canadian industry feels that the removal of American NTBs would jeopardize the survival of the industry in the U.S. Similar to their Canadian counterparts, the Americans also use grade, quality, and health standards as NTBs. With respect to health standards, Canadian meat-producing plants have to be approved by American inspectors and American plants are subjected to inspections by Canadian inspectors. The difference between the two countries is in their method of inspection. The U.S. has one or two full-time veterinarians in Canada who inspect all plants, especially those with large volumes of production, large amounts of exports to the U.S., and those supplying other plants shipping to the U.S.. Canada, on the other hand, concentrates its inspections of American plants on those which have large volumes but which are also high-risk plants.* Authorities in the U.S. have claimed that the Canadian method is more efficient than the American method in that it achieves the same results but is less costly to administer. The Canadian rejection rate of U.S. plants as a percentage of plants examined is higher than the corresponding number of Canadian plants rejected by American officials. Canadian inspectors are biased in the plants which they choose to inspect; American inspectors, on the other hand, are less specific in their selection of plants for inspection.

* These are plants which have been brought to the attention of inspectors either through a poor performance record or other special circumstances.

The Americans also have import quotas on dairy products and a meat import law which sets a ceiling on the import of fresh and frozen meat. The U.S. meat import law restricts imports when triggered but this law is not continuously in effect. When a combination of protected U.S. output (production) and protected import levels reaches a certain specified figure, import quotas are imposed. This figure is calculated in the fall for the upcoming year but the market situation is reviewed quarterly to see whether imports and market expectations exceed the global import figure. If they do, then import controls are imposed or suppliers are told to curtail exports. The present figure is approximately 1.2 million tonnes that can be imported before controls are imposed. Canada has a similar import law but it is more discretionary.

Another NTB that is considered very problematic by the Canadian industry is the use of smaller standard containers by the American industry. The Canadian industry spent millions of dollars to convert its standard containers to metric. If they are forced to return to imperial measurement, smaller U.S. containers could undersell in the Canadian market.

Impact of Free Trade

There is a general consensus within the agricultural and food processing sector that a free trade agreement (FTA) could seriously jeopardize the industry's existence in Canada. One government official feels that the greatest impact would be experienced by the horticultural

sub-sector. Because of our climate and higher costs, free trade would allow the Americans to service our market all year round. The horticultural industry has the highest protection at the present time and it would be unable to survive under a free trade agreement. Supply managed commodities would also become more vulnerable under a free trade arrangement with the U.S. There has been a tendency to insulate these items from trade competition with the U.S. and as a result, we have made them less competitive internationally.

The Canadian Food Processors Association believes that certain sections of the industry may have difficulties under an FTA with the U.S. It considered climatic conditions, a short season, and higher costs of production as very important factors which would decrease Canadian competitiveness and jeopardize the viability of the industry. The American industry is much more competitive in terms of economies of scale and could readily supply the Canadian market without a significant increase in investment. In horticultural items such as processed potatoes and apple products from the Atlantic provinces, Canada could possibly compete, particularly in the eastern U.S. market. Some government officials feel that the Prairies would also probably benefit from an FTA since they are quite competitive in oilseeds, grains, and livestock. All other products are produced more cheaply in the U.S.

Interestingly, the meat packing and processing industry, as represented by the Canadian Meat Council, does not favour free trade with the U.S. in spite of its low tariff rates (3 per cent in 1983) and substantial export trade. This is because it feels that the low tariff

still constitutes a significant psychological barrier, and because it is wary of the potential competitive impact of large American packers from Iowa on the Canadian market under free trade and the significant adjustment costs this would entail. The huge American meat-packing plants would probably have the capacity to flood the central Canadian market where values are highest. This would likely disrupt the traditional east-west access of the Canadian industry and result in the loss of the Montreal-area market which is the most lucrative in North America. Although new markets would probably be secured by western producers in the western U.S., the industry would view the adjustment costs as harmful and unnecessary.

Canadian labour costs are generally higher than in the U.S. In the meat-packing industry, for example, it has been argued that unless the industry was to equalize its labour rates, it is vulnerable to labour displacement, and meat-packing plants would be forced to shut down in Canada under a free trade agreement. The same line of argument is also applied to the food canning industry.

Finally, there would be a loss in seasonal income in both the agriculture and food processing industries. Small communities which depend heavily on seasonal farming income would be especially affected. This, in turn, would have an impact on the processing sector which buys and processes goods from the primary sector.

Conclusion

In addition to the traditional, political arguments against free trade regarding the loss of Canadian autonomy and identity, the industry feels that the most substantial obstacle would be the attitude of the industry itself which is basically united in its belief that there are no real problems with the present system and that there would be little advantage to entering into an FTA with the U.S. Another major political argument against free trade with the U.S. is that Canada does not want to be dependent on an outside source for food. It is generally accepted that countries have a right to be as self-sufficient in food production as possible. To enter into an FTA which renders important food producing industries obsolete would be very difficult to accept politically.

In conclusion, it appears that a total free trade arrangement with the United States in the agricultural and food processing sector is neither realistic nor probable. Canadian disadvantages such as climate and a short growing season cannot be overlooked. Examples of industries where exceptions to a general FTA could be made are dairy products in both Canada and the U.S.; Canadian primary products, especially fresh fruits and vegetables, where Canadian producers are disadvantaged in terms of geography and climate; and possibly alcohol because of customary practice. In the processing industries, on the other hand, an FTA with the U.S. should be considered since in this instance, we are

talking more about industrial processes and as such, Canadian industries could be made competitive. In these areas, an FTA might be a practical possibility.

Appendix

Agriculture and Food Processing Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Livestock	001-003,006	001-003, 006
Grain and Oilseeds	061	061
Fruits and Vegetables	071,091	071,091
Slaughtering, Meat and Poultry Processing	011-017	011-017
Dairy Products and Eggs	051,053	051,053
Flour and Cereal Products, incl. Bakery Products	062-069	062-069
Fruit Processed Products	072-078	072-079
Veg. Processed Products	092-099,141	092-099,141
Sugar Processing	101,104	101,104
Coffee, Tea, Cocoa and Chocolate	111-113	111-113
Non-Alcoholic Beverages	171	171
Alcoholic Beverages	172-173	172-173
Feed Industry	151-157	151-157
Misc. Food Processors, n.e.s.	055,081-082, 114-120,142-146, 181-183	055,081-082, 114-120,142-146, 181-183

* Data extracted from Statistics Canada, Imports (and Exports),
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-202.

FISH AND FISH PRODUCTS

Description

This study has defined the fish and fish products sector by dividing it into six basic categories: 1) fish, whole, fish steaks, blocks, slabs, sticks and portions; fresh, chilled, or frozen; 2) fish, smoked or salted and smoked; salted and/or dried; pickled; 3) fish, canned; 4) shellfish, all preparations; 5) other fishery foods and feeds, not elsewhere stated; and 6) fish and marine animal oil. These sub-sectors were extracted from Statistics Canada CITC classifications. The Statistics Canada figures and our definition were generally accepted by industry and government. An official from the Fisheries Council of Canada said that fresh and frozen really are two unique categories due to different end markets and they should be divided into two separate sub-sectors. Sources from the Department of Fisheries and Oceans (DFO) said that the Department uses Statistics Canada figures but also collects its own when necessary for specific purposes. However, these were not major problems and for the most part, our categories were accepted.

Similar to many of the other sectors under review, the fish and fish products sector is distinctive for a number of reasons. First, large segments of the industry are highly seasonal and depend on social umbrellas, such as unemployment insurance in the off-season. Secondly, the industry is regional in its structure. The bulk of the industry is located in Atlantic Canada with the second highest concentration in

British Columbia. Especially in the Atlantic Provinces, the fishing industry is often the only employer in many small towns. A down-turn in the industry and the subsequent closure of plants have a very heavy impact on the total employment and prosperity of these areas. Thus although the industry is relatively small and might not be a major economic force in the overall Canadian economy, politically it is very important. This political reality causes strains on governments and the industry which are constantly debating between social goals and the industry's economic efficiency. Finally, the sector is distinctive because it is mainly export-oriented. Exports represent around 80 per cent of total sales and in 1982, Canada was the largest seafood exporter in the world.*

There are approximately 100,000 people employed in the fishing industry in Canada. This figure includes both primary fishermen and those employed in the processing segment of the industry. Of this number, 75,000 are employed in Atlantic Canada and 25,000 in British Columbia. In British Columbia, 60 per cent is plant labour and 40 per cent fishermen. In the Atlantic region, the reverse is true--60 per cent of those employed are fishermen, 40 per cent is plant labour. The higher percentage employed in the primary sector is due to the larger number of small boat fishermen in the Atlantic Provinces.

* Fisheries Council of Canada, "Presentation to the Royal Commission on the Economic Union and Development Prospects for Canada", September 22, 1983, p. 2.

There are also 2,000 or so fresh water workers but the number is very insignificant relative to the total of salt water employees. The fishing sector is very labour-intensive and heavily unionized.

There are approximately 350 companies in Canada which dominate the fishing industry. In the Atlantic Provinces, there are 1,000 licensed plants owned by 250 corporate entities; in British Columbia, there are approximately 100 to 150 plants owned by 25 corporate entities. Of the 350 companies, 7 have over 500 employees, 70 have between 50 and 500 employees, and the remaining 273 companies have less than 50 employees. Almost all of these companies are Canadian-owned.

Trade and Protectionism

Table 1 illustrates the levels of Canadian exports and imports with the United States for 1978 and 1983 as well as our overall trade balance. From this table, it is obvious that Canada is highly dependent on export trade in the fish and fish products sector. As is noted in the Fisheries Council of Canada's brief to the Commission, the dominance of the United States as our number one trading partner in seafood cannot be overlooked. The United States market is vital to the continued existence and viability of the Canadian industry, especially in the Atlantic Provinces.

In both 1978 and 1983, there was a substantial trade surplus for the overall sector. That surplus increased by nearly \$75 million in real terms from 1978 to 1983. The only sub-sector where there was a

Table 1

Canadian Trade with the United States, 1978 and 1983:

Fish and Fish Products Sector

(\$ Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	1978 ¹	1978 ²	1983	1978 ¹	1978 ²	1983	1978 ²	1983
h Fresh, Chilled or Frozen	343,581	542,782	576,100	41,495	65,553	78,012	477,229	498,088
h Smoked, Dried, Salted or Pickled	40,215	63,531	48,426	936	1,479	1,644	62,052	46,782
h Canned	10,756	16,992	13,805	13,645	21,556	23,098	(4,564)	(9,293)
llfish	149,024	235,425	313,274	83,032	131,172	131,159	104,253	182,115
er Fishery Food and Feed	4,487	7,088	5,480	983	1,553	2,303	5,535	3,177
h and Marine Animal Oil	3,154	4,983	3,014	231	365	305	4,618	2,709
TOTAL	551,218	870,803	960,099	140,321	221,676	236,521	649,127	723,578

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

Current dollars.

Constant dollars expressed in 1983 values. Refer to Table 3 in "Overview" for calculations of constant dollars.

trade deficit in both years was the canned fish industry where the deficit increased by some \$5 million over the period. There are basically two reasons why there was a deficit in the canned fish industry. First of all, almost all of our canned tuna is imported. A very small percentage of the market is serviced by StarKist in New Brunswick, which is a subsidiary of a larger American company from California. Only about 750 tuna fish are caught per year in the Atlantic since most tuna is not found within the Canadian zone of the 200-mile limit. Secondly, specialty canned shellfish items such as smoked oysters and baby clams are exclusively imported, particularly from Southeast Asian countries such as Korea and Taiwan. Although many of our canned products are imported from the U.S., the majority are initially imported from Third World countries and reach Canada via the U.S. The only offset in the Canadian canned fish industry is salmon. About 40 per cent of Canadian production of canned salmon is exported. The remaining 60 per cent is for domestic consumption.

In terms of the overall balance of trade, the fresh, chilled, and frozen fish sub-sector clearly has the strongest export capability. It accounted for well over 50 per cent of Canadian exports to the United States in 1983.

Table 2 details the levels of Canadian tariffs on a sub-sector by sub-sector basis. As one would expect, the level of tariffs has generally decreased from 1978 to 1983 and further decreases will occur up until 1986. The tariffs range from averages of 6.2 per cent for the canned fish sub-sector to 10.9 per cent for fish and marine animal oil.

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:

Fish and Fish Products Sector

(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4) ÷ (3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Fish Fresh, Chilled or Frozen	41,495	78,012	40,850	74,545	645	3,467	68	374	10.6	10.8
Fish Smoked, Dried, Salted or Pickled	936	1,644	911	1,618	25	26	3	2	12.0	7.7
Fish Canned	13,645	23,098	1,373	16,585	12,272	6,513	1,249	404	10.2	6.2
Shellfish	83,032	131,159	70,881	112,638	12,152	18,520	988	1,489	8.1	8.0
Other Fishery Food and Feed	983	2,303	564	1,667	419	636	32	46	7.6	7.2
Fish and Marine Animal Oil	231	305	6	6	225	299	34	33	15.1	10.9
SECTOR TOTAL	140,321	236,521	114,584	207,059	25,738	29,461	2,374	2,348	9.2	8.0

Statistics Canada, External Trade Division, 1984.

For the fresh, chilled, or frozen fish sub-sector, the tariff is 10.8 per cent. This is fairly high but in 1983 only \$374 thousand of duty was collected out of a total import trade of \$78 million. Highly processed fish such as sticks and portions which have high tariff rates are included in this sub-sector which accounts for the higher average of 10.8 per cent. The amount of duty for the other sub-sectors is also very low. Thus, even though the tariff may defer trade on some individual products, it is generally insignificant in the aggregate.

Table 3 comparatively lists Canadian and American tariffs on a number of common fish and fish products. As is illustrated, the Canadian and United States duties are similar, especially since most products enter both countries duty-free. In the case of blocks, however, the tariff rate is 6.5 per cent for Canadian imports while the United States imposes no duty. For breaded/portions/sticks, the duty is relatively high on both the Canadian and American sides of the border but the American tariff is slightly lower. The same is true for crab.

Few non-tariff barriers exist, however, there are inspection and health standards. Generally, imports to Canada have to meet the same standards as those applied to Canadian produced products. This is usually not a problem with imports from the U.S. but does cause some problems for countries which do not have similar inspection laws (i.e., Third World countries). In the U.S., the New England Council uses possession limits on a number of fish species. Officials from the Department of Fisheries and Oceans see potential for these limits to be enforced. In the case of scallops, U.S. regulations require Canadian

Table 3

Selected Products in the Fish and
Fish Products Sector: Canadian and United States Tariffs, 1984

Product	Canadian Tariff	American Tariff
Shrimp	Free	Free
Shellfish (scallops)	Free	Free
Breaded/ Portions/ Sticks	11%	10% ad. val.
Crab	10%	7.5% ad. val.
Blocks	6.5%	Free
Tuna, packed or preserved in oil	15%	35% ad. val.

Fisheries Council of Canada; International Customs Tariff Bureau,
International Customs Journal, United States of America, No. 21
(16th edition), 1983-84; and Revenue Canada Customs and Excise, Customs
Tariff, Departmental Consolidation, 1984.

caught scallops under a certain size to be imported with an agreed upon certificate. This regulation has not yet affected trade in Canadian scallops but the regulation could be used as a trade barrier.

Industry officials feel that, in general, the industry faces a tremendous amount of ad hoc protectionist activity initiated by United States fishermen. Canadian exports have been countervailed four times in the last decade. Further countervailing is again a possibility for 1985. Further trade protectionist activity may emerge from the recently announce' Georges Bank decision by the World Court. The loss of claimed territory coupled with declining resources in U.S. waters have forced American fishermen to seek trade barriers against Canadian fishery products as a possible solution to their problems. This kind of protectionist activity, it is argued, must be halted if negotiations for a free trade agreement are to be initiated.

Impact of Free Trade

Most fish and fish products that are imported from the United States into Canada are duty-free. As well, most Canadian exports enter the United States free or at low tariff levels. The only exceptions are value-added products such as fish sticks and breaded portions. Because Canada, owing to its export advantage, would benefit from a free trade agreement with the United States, the Fisheries Council of Canada, the organization which represents the interests of the commercial fishing industry in Canada, supports an FTA with the United States. However, the British Columbia Fisheries Council which

represents salmon processors foresees considerable dangers if the tariff on canned salmon is eliminated (i.e., imports of cheaper canned salmon from Alaska and tuna from the U.S.).

Such an agreement with the United States would probably have little immediate impact on Canadian production. In terms of access to the American market, Canada should benefit since the Canadian industry would be able to produce value-added products for export. At present Canada ships mainly frozen fish to the United States where it is processed into sticks and portions for sale. However, American firms in the retail value-added market are big and they may not permit Canadians to enter the market directly. Free trade with the United States would not improve economies of scale at the harvesting or at the production level since the constraint is the size of the resource (i.e., the amount of fish), not the market. Free trade would, however, change the distribution and retail markets if the large U.S. firms which dominate the industry would allow Canadian firms to compete with them.

Conclusion

A free trade arrangement with the United States would not pose competition problems for the Canadian industry. Competition in value-added products like sticks and portions would increase but this would be more than offset by the value-added products that could be produced in Canada and exported to the United States under an FTA. Canada currently sells commodity products such as cod blocks because these enter the U.S. duty-free. Canada then imports the finished

products from the U.S. In some instances, the big Canadian companies have set up processing companies in the U.S. in order to get around the tariff. Under an FTA, Canadian companies could process the fish here and sell the finished product directly in the U.S. market. There would be some adjustment problems in terms of loss of jobs but there is a general consensus within industry and government that the survival of the Canadian fishing industry would not be jeopardized under an FTA with the United States. One official from the Department of Fisheries and Oceans was, however, non-committal in his assessment of the impact of a free trade agreement with the U.S. on the fish and fish products sector. He argued that it is impossible to predict the effect of free trade on competition and labour until more extensive analysis and research is done.

Appendix

Fish and Fish Products Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Fish: Fresh, Chilled or Frozen	030,039	031-039
Fish: Smoked, Dried, Salted or Pickled	041-043	041-043
Fish: Canned	044	044
Shellfish	046	046
Other Fishery Food and Feed	049	049,29193
Fish and Marine Animal Oil	39299	392

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-202.

FORESTRY PRODUCTS

Description

Forestry has been a dominant industry throughout Canadian history, from the initial development of East Coast forests to provide timber for shipbuilding to the diversified, export-oriented manufacturing industries of today. The forestry products sector can be divided into two major sub-sectors: crude materials, which in trade terms involves the export and import of raw logs, and fabricated materials which represents the bulk of the sector and includes such commodities as lumber, plywood and pressed wood, other wood products, and all of the products of the pulp and paper industry. With minor variations (such as the existence of industry associations which are product-based rather than raw material-based, e.g., the Canadian Window and Door Manufacturers' Association includes products made of aluminum and plastic as well as wood) our commodity-based definition is widely accepted.

There are a number of features which distinguish the forest industry. For our purposes the key attribute is the position as the dominant export sector. Over 75 per cent of Canada's \$15.4 billion trade surplus in 1983 came from the sale of forestry products. Softwood lumber, woodpulp and newsprint account for approximately 85 per cent of Canada's forest products exports (and 60 per cent of domestic shipments). These three commodities are also important in terms of world trade and production. In 1980-81, Canadian softwood lumber accounted for 13 per cent of world production and 44 per cent of world

exports while woodpulp represented 14 per cent of production and 33 per cent of exports. The comparable figures for newsprint were 32 per cent and 61 per cent. It is important to note that trends in these statistics are in different directions with Canadian lumber's share growing over time, newsprint's declining (as new processes pave the way for new market entrants). The export share for woodpulp has stayed relatively constant and while production share has declined, Canada remains the world's number one producer.

The second major characteristic of the forestry sector (which sets it apart from all the other sectors), is its regional importance. Forest industries are significant employers in all regions, provide an important source of revenue for several provincial governments and serve as the sole industrial base for about 300 towns across the country. In British Columbia and New Brunswick forestry products production accounts for over 20 per cent of gross provincial product and is significant in several other provinces. In terms of manufacturing production, forest products provide over 50 per cent of B.C.'s output and about one-third of production in the Maritimes, as well as being the largest manufacturing activity outside of the metropolitan areas in both Ontario and Quebec.

Aside from its undisputed economic and geographic importance there are a number of features which focus public attention on the sector: forests are the dominant ground cover and thus highly "visible" making them more susceptible to a census-type inventory than underground resources; the Crown land tenure system in much of the country focusses

greater attention on resource use than do systems of private ownership; and the manufacturing processes in the fabricating sub-sector are widely understood, unlike some other industrial processes such as smelting ores, producing plastics or fabricating steel.

While there are more than 5,000 firms in the sector, forestry is characterized by its diversity. Close to half of the firms are small logging contractors and other small operations are concentrated in sawmilling activities and in small scale, protected end-product processing such as cabinet making and some types of converted paper production. The distribution of companies reflects capital and technological requirements and optimal firm size necessary to achieve economies of scale. For example, there are many small shingle and shake manufacturers which are highly competitive, exporting 90 per cent of their production to the U.S., because of limited capital costs and a high quality resource. On the other hand, newsprint manufacturers are capital and technology-intensive to compete in world markets and, thus, there is a high level of concentration with a few firms responsible for a majority of output.

There has been a major trend toward horizontal and vertical integration with geographic diffusion of activities to utilize new resources; to offset regional cyclical swings; or to take advantage of transportation and production economies and market opportunities, joint marketing and cooperative resource utilization among smaller firms, and integration of logging and manufacturing operations by large eastern Canadian producers. The latter point reflects the diversity of the

sector and the pitfalls of generalization. Ironically, B.C. producers are moving toward more contracting out of logging for reasons of lower cost and to avoid further traumatic corporate readjustments which the 1982-84 recession necessitated. (Only in the pulp and paper industry is there significant integration between primary and secondary manufacturing. This has important implications for assessing potential impacts of free trade, since the secondary manufacturing in the wood products industries tends to be small scale and non-integrated.)

Pulp and paper is the major industry in the sector, accounting for more than 60 per cent of total exports and shipments. Newsprint and woodpulp are the major components of pulp and paper with over 90 per cent of such production being exported. Other papers and paper products are produced almost entirely for the domestic market with less than 15 per cent of 1980 shipments exported. Lumber is the major component of the wood industries, providing about half of wood shipments and over 80 per cent of exports.

Levels of foreign ownership are not high relative to other resource sectors such as metals and minerals, energy and chemicals. For most of the sector intra-corporate trade is negligible, however, there has been some backward integration into Canadian production by foreign corporations. Trade liberalization could change the direction of this phenomenon.

The forest products sector employs more than 300,000 people directly and another 700,000 indirectly -- that is, one Canadian job in

ten is dependent on the sector. Moreover, in addition to the economic dependence of one-industry towns, entire regions are beholden to the forest industry for employment. For example, two-thirds of the jobs in Northern Ontario are said to be forest-related. The industry in British Columbia accounts for about one-third of direct sector employment (comprising almost 7 per cent of the provincial labour force). Ontario and Quebec each have about one-quarter of sector employment. The most labour intensive components of forestry are logging (50-60,000 employees) and millwork (20,000). The 1982 distribution of the labour force within the sector was pulp and allied industries (45 per cent), wood industries (39 per cent) and logging (16 per cent).

The forestry labour force is quite highly unionized, particularly in the large integrated firms. Predictably, the level of unionization is directly related to firm size.

Trade and Protectionism

Table 1 reveals the magnitude of Canada's trade with the United States. Canadian exports in 1983 accounted for 88 per cent of the \$10.67 billion trade turnover, producing a trade surplus of \$8.26 billion. Nominal trade surpluses grew in every commodity group, with the most spectacular rises coming in newsprint where the surplus grew by almost \$1 billion. However, in real terms trade balances worsened in all major categories with the largest decline in lumber trade. Among the contributing factors were the decline in U.S. housing starts; the protracted recession, particularly in B.C.; Canadian dollar appreciation

Table 1

Canadian Trade with the United States, 1978 and 1983:
Forestry Products Sector
(\$ Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Crude Materials Sub-Sector	72,111	113,919	120,200	87,288	137,896	121,566	(23,977)	(1,366)
Lumber	2,647,691	4,182,766	3,014,404	189,960	300,095	269,598	3,882,671	2,744,806
Plywood	15,603	24,649	117,219	30,517	48,210	29,036	(23,561)	88,183
Woodpulp	1,177,765	1,860,608	1,610,209	38,566	60,926	69,351	1,799,682	1,540,858
Newsprint	2,339,177	3,695,382	3,300,531	565	893	2,349	3,694,489	3,298,182
Paper and Paper Products	391,264	618,111	809,007	347,758	549,381	575,224	68,730	233,783
Other Wood and Forestry Fabricated Materials	399,426	631,005	494,916	101,005	159,566	136,454	471,439	358,462
Fabricated Materials Sub-sector	6,970,926	11,012,521	9,346,286	708,371	1,119,070	1,082,013	9,893,451	8,264,273
Sector Total	7,043,037	11,126,441	9,466,486	795,659	1,256,965	1,203,579	9,869,476	8,262,907

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars.

2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

against European currencies; and growing non-tariff protection. We have included plywood as a separate category in order to illustrate the impact which a tariff may have on trade. The high tariffs which both the U.S. (20%) and Canada (15%) impose on plywood imports serve to severely impede trade./

Table 2 illustrates the levels of protection placed on imports to Canada. For the major items (i.e. lumber, woodpulp and newsprint) which make up over 80 per cent of Canada-U.S. trade, the exchange is virtually duty free. On the Canadian side, tariffs are only significant on the more highly processed fabricated and end goods, as well as on plywood. While the duties have declined since 1978 in line with the Tokyo Round accords, they still represent significant percentages (and revenues). Because of the minimal duties collected on the major trade items, the duty collected as a percentage of total imports is now down to just over 4 per cent. However, where duties are still collected, especially on paper products, they act as a significant barrier to trade. As one might predict from the figures in Table 2 there are differences of opinion on the advisability of further reductions in tariffs.

Much of the strength of Canadian forest products' export performance over the past five years must be attributed to the decline in the value of the Canadian dollar against its American counterpart, reinforced by the strength of the Canadian dollar vis à vis the currencies of other potential trading partners. However, the dependence on the U.S. market, the rise of protectionist fears and the uncertainty

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Forestry Products Sector
(\$ Canadian thousands)

Sub-sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4)÷(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Crude Materials Sub-Sector	87,288	121,566	87,237	121,494	51	62	4	8	7.8	12.9
Lumber	189,960	269,598	189,504	268,989	456	609	53	30	11.6	5.0
Plywood	30,517	29,036	311	766	30,206	28,270	4,519	3,507	15.0	12.4
Woodpulp	38,566	69,351	38,476	68,394	90	958	29	120	32.2	12.5
Paper and Paper Products including Newsprint	348,323	577,573	132,600	218,152	215,723	359,420	30,528	39,330	14.2	10.9
Other Wood and Forestry Fabricated Materials	101,005	136,454	37,092	84,684	63,912	51,770	7,494	5,960	11.7	11.5
Fabricated Materials Sub-sector	708,371	1,082,013	397,984	640,985	310,387	441,028	42,353	48,946	13.7	11.1
Sector Total	795,659	1,203,569	485,221	762,479	310,438	441,090	42,357	48,954	13.6	11.1

Table 3

Selected Products in the Forestry Products Sector:
Canadian and United States Tariffs, 1984

Product	Canadian Tariff	American Tariff
Plywood - Softwood	15%	20%
Hardwood [Birch	10.6%	4.7%
[Walnut		12.5%
[Oak, Maple, etc.		8%
Wooden Windows	13.4%	6.9%
Wallpaper	10.3%	1.9%
Linerboard	10.3%	5.9%

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No.21, (16th edition), 1983-84.

engendered by a string of legal and legislative actions in the U.S. has heightened Canadian interest in securing some sort of guaranteed market access. Historically, neither species of tree nor man recognized the political-economic separation imposed by the border. The industry developed in the nineteenth century on a north-south axis and even today about 2 per cent of the North American softwood log production is cut in the U.S. and processed in Canada. (While much of this import trade is chip logs, some becomes lumber which finds its way back to the U.S.). The unsuccessful countervail action against Canadian softwood exports last year revived memories of earlier U.S. actions such as the Dingley Tariff of 1897 which ended three years of virtually free trade in forest products, and the United States Revenue Act of 1932 which reduced B.C. exports of lumber by more than 90 per cent in one year.

Most of the U.S. complaints about Canadian non-tariff barriers focus on government actions, most recently on the provincial collection of stumpage fees which are believed to be so low that they constitute an unfair advantage for Canadian producers. There are also outstanding grievances over regional development policy in Eastern Canada and the program which saw the federal government spend close to \$300 million on the modernization of pulp and paper plants. While there are a number of Crown corporations active in forestry, only Domtar is large enough to attract interest and its behaviour under Quebec government control has not deviated significantly from other Canadian competitors.

On the Canadian side there are a number of NTB complaints, including questions on the U.S. treatment of freight and transportation

costs for customs valuation purposes; state and federal "Buy American" provisions (for example, on federally funded housing); building codes which do not recognize the structural properties of Canadian waferboard; existence of different grading systems for specialty wood products administered by various trade associations; and requirements for marking plywood with country of origin. While most of these complaints might be classified as irritants, the major concern for Canadian exporters is the uncertainty created by the possibility of some legislative action. In early 1985 there was a bill tabled in the Congress which would limit Canadian lumber, siding, shingles and shakes, and particleboard imports to the U.S. to 25 per cent of the U.S. domestic market (down from the 30 per cent which Canadian exports now hold). This action has now evolved to discussion of 20 per cent of U.S. domestic markets, by region. (In some regions, Canada now supplies up to 70 per cent of the market).

Impact of Free Trade

A bilateral free trade arrangement with the U.S. would have limited impact on the competitiveness and industrial structure of Canada's primary export commodities (lumber, pulp, and newsprint) because these products already trade virtually duty free and the industries are world-scale in order to compete internationally, even though the dominant markets are American. The certainty created by an agreement would probably provide the necessary incentives for some further rationalization of production and new investment. For plywood, free trade would confirm the decline of the West Coast industry. It should

be emphasized that major adjustments have already occurred as a result of the recession. This particular segment of the industry has been severely harmed by the tariff which prevented necessary specialization and reduced the incentive to keep plants efficient. (In its brief to the Commission, Regional Council No. 1 of the International Woodworkers of America argues that the tariff has been detrimental to the Coast plywood industry and may have encouraged some companies to invest outside Canada.) In concert with this regional adjustment there would be continuation of the trend away from plywood production in favour of waferboard, which shares the structural properties of plywood but is much cheaper to manufacture. Unfortunately, this would have some negative impacts on labour because waferboard production is less labour intensive. However, the adjustment could be gradual and the export potential of waferboard could produce significant net increases in employment.

It is probable that the lumber industry will undergo some restructuring, albeit only partially due to potential free trade. Government officials suggest that of the 3000 sawmills in Canada, only about 300 (which account for 85 per cent of production) are efficient. Industry representatives dispute this contention, claiming that far more are efficient when one considers resource base and other cost factors. In addition, many sawmills only serve local markets, a fact that will not change under free trade unless there are major reductions in relative costs of transport.

Shingle and shake production would be minimally affected by free trade since 95 per cent of production already goes to the US. The major impact of free trade on the wood industries would likely fall upon the millwork manufacturers (windows and doors, flooring, mouldings and cabinets). The small, protected, labour-intensive operations would be under strong pressure from larger, more capital-intensive manufacturers. One of the industry spokesmen voiced the fear that the large American producers would "cherry-pick", i.e., increase their production marginally in order to skim the bulk of the Canadian market, leaving only the "pits" for the domestic producers. However, there should be ample opportunities for some small producers to carve out a regional market niche. There is no doubt that major capital investments would be required in order for much of the industry to survive, but it should be feasible to phase in the adjustment so that the small manufacturers are not immediately destroyed. Regionally, the greatest impact will be in Quebec where the smallest producers are concentrated.

While the industrial structure of the pulp and newsprint sub-sectors should not change, there will still be adjustments for these industries. For example, as previously mentioned, it is possible that the trend toward backward integration into pulp by foreign companies will be offset by forward integration into paper production by Canadian producers. Newsprint production requires further investment to become more efficient in the face of more competitors, uncertain future demand and higher cost structures (e.g., recent findings suggest that newsprint wood costs are 40 per cent higher and labour costs are 20 per cent higher than in the U.S. -- based on a \$US 0.78 Canadian dollar).

Perhaps the greatest adjustment in the paper industries will be faced by the various manufacturers of fine papers. Even now major challenges are being confronted in attempting to accomodate the changes of the Tokyo Round. The companies in this industry are characterized by a lack of specialization which has resulted in a range of production grades of paper which is about the same as for the U.S. industry. Much of this segment of the pulp and paper industry is located in Quebec and the Maritimes.

The major changes for labour are likely to be experienced in the provinces east of Ontario (with the exception of the major on-going adjustment in the B.C. Coast plywood industry). This is the case because it is in these areas that many of the small scale, inefficient producers are located and, in addition, because these are the areas that must compete with the lowest cost production in North America which is situated in the south-eastern United States. In pulp and paper, there is likely to be a major change in the way that wage rates are determined. Traditionally in Canada, pulp and paper wages have followed the trend set by the highly paid coastal forest industry in B.C. However under free trade, industries in eastern Canada would be competing directly with south-eastern U.S. producers. Industry representatives argue that the relevant wage comparison will become the lower U.S. rates. It remains to be seen how successful labour negotiators will be in disputing this contention with arguments about the higher quality wood fibre in Canada and the cheaper energy costs.

Adjustment to meet world markets in many cases requires massive capital investments to realize economies of scale. The current uncertainties created by the often arbitrary imposition, or the threatened use, of NTBs means that companies are reluctant to make the necessary commitment. /Thus, free trade could have the effect (particularly in pulp and paper) of making Canadian production more competitive internationally. In a limited way, it is possible to diversify trade through a free trade agreement by establishing the conditions necessary for drawing out the investment. The fact that about half of the paper-making machines in Canada pre-date 1950 (versus about 25 per cent in the U.S. and 5 per cent in Scandinavia), indicates that there is considerable scope for gains through new investment.

The possibility of disinvestment will depend on production economics, new investment requirements and relative transportation costs for various levels of production. For some commodities, like plywood, the cost of rail transport has risen to levels where markets are highly regionalized unless water transport is feasible. It is unlikely that much disinvestment will occur, however, new investment may concentrate on more capital intensive activities (e.g. market pulp production) rather than labour intensive activities (e.g. fine paper production). Canadian direct investment in the U.S. was \$1.4 billion in 1980 and it is important to remember that most Canadian and American foreign investment is in areas of the forest industry where trade is virtually tariff free at present.

Because the forest industry is predominantly rural in plant location, the impact of free trade would be concentrated regionally in areas where the industry is the primary or even sole employer. The major impacts are likely to fall on Quebec and the Maritime provinces, as well as on some mill/work producers in B.C. Readjustment problems are likely to be significant for a number of labour intensive operations. However, these changes are occurring incrementally, in any case, as a result of Tokyo Round tariff reductions and physical plant obsolescence. The keys to satisfactory adjustment will be skills retraining to respond to lower labour demand in existing plants and a gradual decline in protection to prevent a surge of imports from wiping out small producers in the short run.

Conclusion

While most of the activity related to free trade will occur at the margin in trade terms, the parts of the sector potentially affected are major employers and have a regional influence disproportionate to their relative economic importance. The impacts will be differential both regionally and industrially among sector components, thus it is not surprising that no consensus exists on the advisability of free trade arrangements. Department of Regional Industrial Expansion surveys reveal that there is not a lot of support in the industry for free trade, although industry representatives have often emphasized the need to reduce the uncertainty of arbitrary application of NTBs. The Canadian Pulp and Paper Association (CPPA) encourages any initiative but

favours a multilateral approach. This view is probably not shared by the smaller paper producers who are not members of the CPPA.

Trade liberalization would expedite the rationalization of inefficient segments of the forest industry and provide market access to large and growing U.S. markets. Canada has not been securing a proportionate share of U.S. market growth recently. Furthermore, three other features of Canada's forest trade with the U.S. cause concern. First, the U.S. is becoming more self-sufficient and internationally competitive in the very products which are Canada's major exports, signalling the need to be as efficient as possible. Second, there are serious concerns about the resource base and the ability to sustain current production levels (let alone increase production to meet new demand). Our future trade constraints may not be demand but supply-related. Finally, Canada is becoming increasingly dependent on U.S. trade in a number of commodities. For example, in the first nine months of 1984 newsprint exports to Europe dropped 20 per cent while those to the US increased by 12 per cent, largely due to the combination of exchange rates and new EEC import quotas.

Clearly, there is a need for action to address the problems and prospects of the sector. It seems prudent to act rather than waiting for inevitable incremental change over which little control and direction are possible.

Appendix

Forestry Products Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Crude Materials	231,238	231-239,29179
Lumber	331	331
Plywood	338	338,33995
Woodpulp	340	340
Newsprint	351	35109,29130
Paper and Paper Products	352-359,29139	35115-359, 29140
Other Wood and Forestry Fabricated Materials	333-337,339	333-337,33908-33975, 33999

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-201.

METALS AND MINERALS

Description

The metals and minerals industry has been known traditionally for its "boom-or-bust" nature. The Canadian sector, while making reasonably successful adjustments to even out the troughs and peaks of such cycles, is still affected by this international pattern.

The sector definition used here, which is based upon Statistics Canada data, divides the metals and minerals sector into two groups: crude materials and fabricated materials. The crude materials sub-sector includes such items as metal-bearing ores, concentrates and scraps as well as non-metallic minerals. The fabricated materials sub-sector includes iron and steel products; non-ferrous metals, including alloys; bolts, nuts, nails, screws and basic hardware; cement and concrete basic products; and other metal fabricated and non-metallic basic products. This definition includes more of the production process than does the definition used by the Mining Association of Canada. While this organization would include "shapes and forms" in its sector definition, it would not include hardware. Its definition would also include coal, which this study treats as part of the energy sector.

One unique feature of this sector is its high level of Canadian ownership. Over 70 per cent of firms are Canadian-owned. Ninety-five per cent of steel-producing companies are domestically-owned, including

Stelco, Dofasco, Algoma Steel Corporation, Sydney Steel Corporation, Interprovincial Steel and Pipe Co. Ltd. (Ipsco), and Sidbec-Dosco.

Canada's resources in metals and minerals are widely dispersed. The three largest producing provinces, Ontario, British Columbia, and Quebec, had outputs of \$3.5 billion, \$2.1 billion and \$1.9 billion respectively in 1983. Alberta, Saskatchewan, Newfoundland, and the Northwest Territories produced approximately \$1.2 billion, \$1.1 billion, \$690 million and \$532 million. Collectively, the provinces of New Brunswick, Manitoba, Nova Scotia, Prince Edward Island, and the Yukon Territory accounted for the remaining \$1.3 billion or 10.6 per cent of Canadian production (\$12.3 billion).

The mining, or crude materials sub-sector is very sensitive to changes in international supply and demand of its products. The recession of the early 1980s severely affected the Canadian producers' ability to sell. Before 1982, the capacity utilization rate was about 90 per cent, but it has now dropped to below 70 per cent. This limitation, in combination with the increased mineral production from less-developed countries, has forced companies in this sector to rationalize their operations through plant closures, layoffs, and by improving efficiency in the remaining plants.

The Department of Energy, Mines and Resources in "The Canadian Mineral Industry, Monthly Report", indicated that employment in 1983 for the metals and minerals sector was 410,700 persons, which is up from the 1982 figure of 352,300. Employment in the mining industry in 1983 was

97,700 persons, while employment in smelting and refining, iron and steel mills, and other primary metal production totalled 104,400 people. Metal fabricating employed 159,900 people, and nonmetallic mineral fabricating employed 48,700 workers.

A significant distinction in firm size can be made between the companies that explore for minerals and those that fabricate metals and alloys. Independent exploration companies tend to be small, high-risk ventures, while the fabrication-oriented companies are often large and vertically-integrated.

Special attention must be paid to the production of ferrous and non-ferrous metals. Steel is the main product of ferrous metal production, while the major Canadian non-ferrous metal commodities are aluminum, copper, lead, nickel, and zinc. In general, the value per unit of weight for non-ferrous metals is greater than for ferrous metals.

Steel can be divided by type into carbon steel and specialty steel. The larger industry in Canada by far is the carbon steel industry, which is predominantly Canadian-owned. It produces: (a) rolling mill products (bars, plates, sheets, strips and structural shapes) which are used for the automotive and construction industries and by pipe and tube manufacturers; (b) pipes and tubes, which are used by the oil and gas utilities, plumbing, and chemical process industries as well as for rural, agricultural and electrical construction purposes,

and (c) wire products (wire of all gauges, woven and welded mesh products, staples and nails).

The specialty steel industry is considered to be almost separate from the carbon steel industry because of its different raw material requirements and market orientation. This industry incorporates other elements (e.g. ferro-nickel) into the metal to render them stainless, heat-resistant, or suitable for the production of tools and dies. Employment in specialty steel is much lower (roughly 2,500) since only two firms operate in Canada: Atlas Steel (a subsidiary of Rio Algom Ltd.) and Slater Steel (54 per cent owned by British Steel Corporation).

Canada is the world's largest mine producer of zinc and nickel, second in molybdenum, columbium, selenium, titanium and uranium, third in lead and silver, and fourth in copper. Canada does not produce bauxite, a key raw material for aluminum production. Bauxite is mined in countries such as Guyana, Jamaica and Australia and is shipped to Canada either in the natural state or in a processed form as aluminum oxide (alumina) for smelting.

The major firms in the non-ferrous metals sector are: Inco and Falconbridge which produce nickel and copper; Noranda which produces lead, copper and zinc; Texasgulf which produces copper and zinc; Hudson Bay Mining and Sherritt Gordon which produce copper and zinc; and Cominco which produces zinc and lead. Aluminum is processed by both Alcan and Reynolds.

Mines are generally located in remote areas, and consequently the companies have some difficulty in attracting sufficient skilled labour.

As in the steel industry, the smelting and refining processes are highly capital and energy-intensive. The firms that specialize in this aspect of the sector are large and integrated, and some (e.g. Alcan, Falconbridge, Inco) have metal and mineral interests in other countries.

The economic problems that affected the ferrous metals industry have also troubled the non-ferrous metals industry. Copper-producing firms have been very sensitive to downward pressures on price created by copper from less-developed countries, especially Chile and the Philippines. Their reactions to the problems have been exactly the same: plant closures, layoffs and rationalization of production processes.

Trade and Protectionism

Table 1 illustrates the huge volume of trade in metals and minerals between Canada and the United States, clearly demonstrating its importance to the overall Canadian economy. In 1978, the metals and minerals sector registered a substantial trade surplus of \$4.1 billion. The trade surplus decreased to \$2.7 billion in 1983. Of these amounts, the fabricated materials sub-sector had a trade surplus of \$2.8 billion in both 1978 and 1983, while the crude minerals sub-sector posted a \$97 million deficit in 1983 down from a \$1.3 billion surplus in 1978. The decrease in the trade balance in the crude minerals sub-sector can be

Table 1

Canadian Trade with the United States, 1978 and 1983:
Metals and Minerals Sector
(\$Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Crude Minerals Sub-Sector	1,379,945	2,180,008	1,162,706	526,402	831,599	1,259,981	1,348,409	(97,275)
Metals-Bearing Ores, Concentrates & Scrap	1,123,933	1,775,566	894,467	339,375	536,137	1,033,577	1,239,429	(139,110)
Non-Metallic Minerals	256,013	404,444	268,239	187,028	295,463	226,404	108,981	41,835
Fabricated Materials Sub-Sector	3,920,999	6,194,311	6,302,132	2,160,740	3,413,491	3,530,497	2,780,820	2,771,635
Iron and Steel Products	1,212,392	1,915,311	1,448,628	533,116	842,205	671,176	1,073,106	777,452
Non-Ferrous Metals	2,077,075	3,281,319	3,982,666	642,378	1,014,815	1,620,502	2,266,504	2,362,164
Nuts, Bolts, Screws, Nails, and Basic Hardware	176,356	278,603	248,472	345,779	546,254	419,378	(267,657)	(170,906)
Cement and Concrete Basic Products	98,608	155,779	127,187	15,279	24,137	24,279	131,642	102,908
Other Metal Fabricated and Non-Fabricated Basic Products	356,568	563,299	495,178	624,188	986,079	795,161	(422,780)	(299,983)
Sector Total	5,300,945	8,374,321	7,464,838	2,687,142	4,245,090	4,790,477	4,129,231	2,674,361

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars

2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

partly attributed to the increase in imports of metal-bearing ores, concentrates and scrap and the subsequent decrease in the trade balance from a surplus of \$1.2 billion in 1978 to a \$139 million deficit in 1983. The huge surplus in the fabricated materials sub-sector can be accounted for primarily by the surplus in non-ferrous metals and iron and steel products in both years. The surplus in iron and steel products decreased from \$1 billion in 1978 to \$778 million in 1983.

The overall sector showed a decrease in exports (in dollar values) and a slight increase in imports from 1978 to 1983. For 1978, Canadian exports exceeded Canadian imports by a ratio of 2 to 1. In 1983, the margin between exports and imports decreased slightly but exports still exceeded imports by over \$2.6 billion. The contribution of export trade in the metals and minerals sector to Canada's overall trade surplus is considerable.

Table 2 reviews the levels of Canadian tariffs on a sub-sector by sub-sector basis. On those products that are dutiable, tariffs for all sub-sectors are quite high, ranging from 5.8 per cent for non-ferrous metals to 14.1 per cent for bolts, nuts, nails, screws and basic hardware. These tariffs are for 1983 and have decreased slightly since 1978 due to the Tokyo Round of the GATT. The average tariff for the metals and minerals sector is 10.1 per cent for 1983, a decrease of over 2 per cent since 1978. However, only \$143 million in duty was collected on \$4 billion in imports in 1983. \$142 million of this duty was collected in the fabricated materials sub-sector; the remainder was for crude minerals. As can be determined from the table, much of the

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Metals and Minerals Sector
(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4) + (3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Crude Minerals Sub-Sector	526,402	1,259,981	514,552	1,246,394	11,850	13,587	1,257	1,298	10.6	9.6
Metal-Bearing Ores, Concentrates & Scrap	339,375	1,033,577	338,255	1,032,797	1,119	779	132	58	11.8	7.5
Non-Metallic Minerals	187,028	226,404	176,296	213,596	10,731	12,808	1,125	1,239	10.5	9.7
Fabricated Materials Sub-Sector	2,160,740	3,530,497	1,019,580	2,115,196	1,141,159	1,415,301	139,721	142,280	12.2	10.1
Iron and Steel Products	533,116	671,176	223,723	306,442	309,393	364,734	34,237	35,182	11.1	9.7
Non-Ferrous Metals	642,378	1,620,502	413,915	1,287,488	228,463	333,013	15,460	19,341	6.8	5.8
Nuts, Bolts, Nails, Screws, and Basic Hardware	345,779	419,378	194,044	244,250	151,735	175,128	25,419	24,734	16.8	14.1
Cement and Concrete Basic Products	15,279	24,279	12,948	22,783	2,330	1,496	167	136	7.2	9.1
Other Metal Fabricated and Non-Fabricated Basic Products	624,188	795,161	174,950	254,232	449,238	540,929	64,438	62,888	14.3	11.6
Sector Total	2,687,142	4,790,477	1,534,132	3,361,589	1,153,009	1,428,888	140,979	143,578	12.2	10.1

Statistics Canada, External Trade Division, 1984.

sector's imports enter Canada duty-free. The dutiable goods, however, are subjected to relatively high tariffs and are an irritant, especially to the U.S.

Table 3 lists comparative Canadian and American tariffs on a number of common metals and minerals products. While there is some congruency on several of the items listed in the table, there are others in which the difference between the Canadian and American tariff is substantial. Barbed wire, for example, enters the U.S. from Canada duty-free. The Canadian tariff, on the other hand, is 8 per cent for American exports of barbed wire. For magnesium, the gap between the two countries is also significant. Canada imports magnesium from the U.S. at a duty rate of 4.5 per cent. The American tariff is substantially higher at 13.5 per cent. The tariff is considered a major irritant during sales negotiations and the only Canadian producer of magnesium in Canada feels that removal of both the Canadian and American tariff would be beneficial to the industry.* There is also quite a substantial difference between the Canadian and American tariff for thumb tacks. The Canadian tariff is 9.7 per cent higher than the American tariff. It appears that for crude metals and minerals, the tariff is either free on both sides or the Canadian tariff is substantially lower (i.e., magnesium). In the case of fabricated or end-use metals and minerals products, the reverse appears to be true--the Canadian tariff is higher than its American counterpart.

* Information obtained at DRIE.

Table 3

**Selected Products in the Metals and Minerals Sector:
Canadian and United States Tariffs, 1984**

Product (American Description)	Canadian Tariff	American Tariff
Sand, crude or manufactured, and gravel: Sands containing by weight 95% or more of silica and not more than 1.6% of oxide of iron.	Free	12¢/ton
Other	Free	Free
Asbestos, not manufactured, asbestos crudes, fibers and stucco, and asbestos sand and refuse containing not more than 15% by weight of foreign matter.	Free	Free
Barbed wire	8.0%	Free
Thumb tacks, of copper	12.9%	3.2% ad.val.
Magnesium	4.5%	13.5%
Wood screws, of iron or steel	15.6%	12.5%
Cut nails, of iron or steel, of one-piece construction, not over 2" in length	43¢/100 lbs.	3.4%

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84.

There was almost unanimous agreement within the metals and minerals sector that the number of Canadian non-tariff barriers was minimal. One government official cited the federal government Frigate Program as a possible example of an NTB. Under this program, preference is given to Canadian companies who compete for contracts. The chances of foreign-owned companies obtaining contracts are usually minimal.

The major NTB on the American side is the federal Surface Transportation Assistance Act (STAA). This Act deals with federally funded urban transit and highway projects. Since 1978, projects with STAA funding are subject to a requirement that foreign steel should only be used if the use of U.S. steel would increase the total project cost by more than 25 per cent.

Other examples of American NTBs are section 201 of the Trade Reform Act of 1974 and the Buy America Act of 1933. Section 201 allows American producers to request assistance from the U.S. government in the case of injury from imports. As a result of these import relief measures, restrictions are often placed on Canadian exports to the U.S. The Government of Canada also restricts import increases, when they are causing injury, by imposing surcharges or quotas. The Buy America Act provides a general preference level of 6 per cent to American companies for products on federal government purchases. There are approximately 30 states which also have "Buy America" policies. Although these procurement restrictions are not product-specific, steel is the product most frequently protected. Another potential American NTB is the user's fee. The steel industry in the U.S. is presently lobbying for

Congressional support for the implementation of a fee for the use of the customs service. The anticipated charge is \$70.00 an entry. Because the Canadian industry does most of its business on a daily basis and ships mainly by truck, Canadian industry has approximately 170,000 entries a year. This would cost us an extra \$11.9 million. The same number of shipments would cost the Brazilians for example, much less since they send a boatload of goods at a time and would pay the same amount as for the Canadian truck load.

Impact of Free Trade

Because of the diversity of the metals and minerals sector, there is no consensus among industry and government officials on the impact of a free trade agreement with the United States. However, there appears to be differing opinions between those involved in the non-ferrous and the ferrous industries. An FTA with the U.S. would likely have little or no impact on the Canadian non-ferrous industry. Because Canadian production complements rather than competes with U.S. production of metals, market access and economies of scale would not improve. Canadian plants are already world scale in the non-ferrous industry and as a result, would have few problems competing under free trade. Canada exports over two-thirds of production and the U.S. and Europe require these exported raw materials for end-products fabrication. Because Canada has the economic resource base--the mines--reducing or eliminating tariffs is not a major consideration. Canadian imports are already duty-free and export duties to the U.S. are very low.

Industry likely agrees with this assessment. One industry official argues that the impact on production, market access, and economies of scale would be minimal. He feels that an FTA could make some difference on future decisions to upgrade to end-products production but because the American market is presently stagnant, the main industry concerns at the present are focused on protectionism in other markets. In terms of labour, both industry and government officials agree that an FTA with the U.S. would have little impact on non-ferrous metals production. If there was any impact at all, it would probably be felt by the smaller fabricators and highly subsidized producers.

The ferrous (i.e., steel) industry is divided in its opinion over the impact of an FTA with the U.S. There is some feeling that insufficient industry analysis has been completed to confirm whether the impact of an FTA would be positive or negative. There is a general belief, however, that free trade would improve market access to the U.S. because it would reduce NTBs. Canadian companies already have economies of scale and are able to compete. In terms of labour and adjustment problems, the industry argues that the situation is unclear pending further research and study.

One segment of the industry, however, is especially interested in obtaining greater access to the American market. The specialty steel industry believes that an FTA with the U.S. would improve economies of scale. Canadian specialty steel plants are not producing at capacity and the demand in the domestic market is inadequate to support the industry. As a result, there is fear within this industry that if it

cannot gain greater access to the American market soon, Canada will lose its specialty steel industry.

Government officials from the Department of Regional Industrial Expansion feel that an FTA with the U.S. would increase market access to that country and would, therefore, likely lead to increased production in Canadian plants. Although the Canadian steel industry already has economies of scale, it is argued that they would improve under free trade. The secret to being world competitive is capacity utilization and Canada has managed to maintain its standard in this respect. In terms of competition, one obstacle which would have to be overcome with an FTA is discounted prices in the U.S. when demand decreases. There is no price leader in the U.S.; when one mill cuts its prices, the others follow. Some smaller Canadian companies are afraid that they will not be able to survive the practice of predatory pricing in their own home market. A government official suggests that the negative consequences of such a practice could be partially avoided if anti-dumping legislation remained as a safeguard in both Canada and the U.S. for the first few years after a free trade agreement was signed.

It was suggested by a government source that labour in the steel industry could be stabilized under an FTA because the market would be ensured. However, all future investment in the industry is geared toward productivity improvement and this cannot be attained unless employment is decreased. Nevertheless, this is likely to happen whether we have free trade or not. Thus, at best, the status quo or a minor increase in employment is likely to occur under free trade. If we do

not obtain an FTA with the U.S., however, a decrease in labour in the industry is possible.

Conclusion

An FTA with the U.S. does not appear to present a major difficulty for the sector. One of the major problems with the implementation of such an agreement would be convincing the American industry to accept it. Because of the recent high level of import penetration in the U.S. and the failure of the American industry to modernize, the industry argues that if its domestic steel industry is to survive, the American government should continue to provide protective measures as a means to allow the industry to make the necessary structural adjustments. This position is viewed by the Canadian industry as a major stumbling block to the U.S. government negotiating and signing a bilateral free trade agreement. Because the Canadian non-ferrous industry is already world competitive in terms of production and economies of scale, the effects of a free trade agreement with the United States would be minimal. The American industry needs the raw materials that Canada exports for its end-products fabrication. As a result, free trade is not a major political issue for the non-ferrous refined metal industry.

Appendix

Metals and Minerals Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Metals-bearing Ores, / Concentrates and Scraps	251-259	251-259
Non-Metallic Minerals	271-279	271-279
Iron and Steel Products	441-449	441-449
Non-Ferrous Metals	451-459	451-459
Nuts, Bolts, Screws, Nails and Basic Hardware	465	465
Cement and Concrete Basic Products	475	475
Other Metal Fabricated and Non-Fabricated Materials	461-46971, 46999-474, 476-479	461-46904, 46999-474, 476-479

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-202.

ENERGY

Description

Control over energy supply and price, is highly politicized in the Canadian and international political economies. Reference to Churchill Falls, the Great Pipeline Debate, the formation of Hydro Quebec, Mackenzie Valley, OPEC, James Bay, Ottawa-Alberta energy pricing discussions and the National Energy Program will bring to mind the contentious history of the energy arena. To discuss the potential impact of Canada-U.S. free trade upon this sector is to emphasize the myriad of governmental controls rather than to discuss applicable tariffs, for tariff protection in this sector is minimal.

For the purposes of this study, the energy sector is composed of the following products: (1) coal; (2) natural gas; (3) petroleum and condensates; (4) crude bitumens; (5) gasoline and fuel oil; (6) other petroleum and coal products; (7) coke of coal and petroleum; and (8) electricity. In general, there is acceptance of this definition. The federal Department of Energy, Mines and Resources and the Canadian Mining Association classify coal in the minerals sector rather than in the energy sector because of the need to mine the commodity and its role in the steel manufacturing process. However, a strong logical case can be made to classify coal as an energy source, especially as it is used as a thermal source for electricity.

There are two major types of industries in the energy sector: exploration and development, and production and refining. The first industry is composed primarily of smaller Canadian-based companies that operate at a high risk. Statistics Canada data show that there were 1,234 companies involved in the mineral fuels industry in 1981 with total sales of \$21.2 billion. A minority of them, 198, were foreign-controlled, but this group accounted for 58.4 per cent of the sales. In contrast production and refining operations tend to be conducted by large corporations--either by international oil companies in the case of petroleum and natural gas production, or by provincially-owned or regulated electrical monopolies. The Canadian Electrical Association points out that in the electrical sub-sector, hydroelectricity is by far the most common source (69 per cent of production in 1981) with thermal and nuclear production ranking second and third.

Involvement in the energy sector, by both the provincial and federal governments is quite comprehensive. Extensive regulation occurs as a consequence of National Energy Board policies and the Energy Pricing and Taxation Agreements between the two levels of government. Conservation of energy is also monitored by the provincial governments.

Total energy consumption varies by type from province to province, but the major commodity consumed is oil. A Gas Inter-Cité Québec brief shows that in all provinces, excepting Saskatchewan and Alberta where the main energy type consumed was natural gas, more oil was consumed than natural gas, coal or electricity. The Maritimes showed the highest

reliance on oil, which had an 83 per cent share in that market. (Gas Inter-cité Québec).

If one examines the 1983 proportion of fuel types used for non-transportation purposes, fuels other than oil become more important. The National Energy Board indicates that in Quebec, electricity is the major fuel (40 per cent) while in Ontario and the Prairies, gas is the main fuel (38 and 59 per cent respectively). The most widely-used fuel in British Columbia, the Yukon and Northwest Territories is wood, which has a 34 per cent share for this geographical grouping. Wood wastes account for half of all industrial energy used in British Columbia.

In 1981, there were 63 corporations involved in the production of petroleum and coal products with total sales of \$29.1 billion. Foreign-controlled firms accounted for 78 per cent of these sales. Of the five largest oil and gas-producing companies operating in Canada, one company, Petro-Canada, was Canadian-controlled through federal government ownership. The other four were Imperial Oil, Gulf, Texaco and Shell.

In 1982, revenue from natural gas sales, including exports, totalled \$10.5-billion. In 1981, 66,000 people were employed in natural gas production, transmission and distribution. From 1973 to 1982, the energy sector produced \$110-billion worth of crude oil, natural gas and gas by-products, and exported over 50 per cent to various markets.

Expenditures by the energy sector have become relevant to Canada's GNP for they have grown, according to Petro-Canada, from 3 per cent in the 1960s and 1970s, to 5 per cent in 1983. This expenditure growth is accounted for, in part, by the Petroleum Incentive Program.

Labour in this sector is highly unionized. Generally the production processes are highly capital-intensive and receptive to technological innovation.

Numerous perceptions about the role of government in the industry, fears about the depletion of non-renewable energy sources, uncertainty over a continual supply of imported energy to Canada and concerns about the safety of nuclear-powered generating stations give this sector the high profile that the metals and minerals sector--a similar resource-producing sector--does not command.

Trade and Protectionism

Exports of energy products, which total 12 per cent of Canada's total merchandise exports to all markets, are highly regulated by either federal or provincial bodies. The National Energy Board (NEB) has jurisdiction over all energy exports, excepting coal exports, while provincial regulating agencies also monitor outflows of electricity and can establish their own criteria subject to NEB approval. Environmental assessments are part of the application process for NEB licences.

The value of energy exports to the United States increased significantly between 1978 and 1983, rising from \$8.1 billion to \$11.4 billion. Imports, on the other hand, have declined, starting at \$2.2 billion and falling to \$1.9 billion over this period. The discrepancy between exports and imports has given Canada a rising trade surplus with the U.S. in this sector. The surplus increased from \$5.9 billion to \$9.5 billion, making it the largest for any Canadian sector.

Most energy export markets are strong. Canada exported nearly \$4 billion worth of natural gas and nearly \$3 billion worth of petroleum to the United States in 1983. There are two weak areas: coal exports, and the export of coke of coal and petroleum. Between 1978 and 1983, the Canadian trade deficit with the U.S. for the two items remained large, improving from \$999 million to \$829 million and \$126 million to \$105 million respectively. Coal is one commodity that Canada imports almost exclusively from the U.S., but sells primarily to Japan, Korea and Brazil.

The comparatively high level of natural gas exports to the U.S. masks two types of barriers to natural gas sales in its highly-competitive gas market. American prices have been lower than Canadian prices, and there have been a few American regulatory barriers to foreign gas purchases at the federal and state levels.

There is a very significant trade imbalance in the electricity sub-sector. The value of exports to the United States exceeded imports by \$754 million in 1978 and \$1.2 billion in 1983. Roughly 10 per cent

Table 1
Canadian Trade with the United States, 1978 and 1983
Energy Sector

(\$ Canadian thousand)

ENERGY SUB-SECTOR	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Coal	84	133	10,562	632,435	999,107	840,008	(998,974)	(829,446)
Natural Gas	2,190,328	3,460,234	3,958,211	115	182	219	3,460,052	3,957,992
Petroleum and Condensates	1,572,662	2,484,458	3,411,944	527,897	833,961	422,679	1,650,497	2,989,265
Crude Bitumens	61,645	97,385	80,512	1,266	2,000	999	95,385	79,513
Gasoline and Fuel Oil	382,729	604,627	1,252,583	30,371	47,979	233,198	556,648	1,019,385
Other Petroleum and Coal Products	422,434	667,352	1,448,097	96,680	152,733	317,968	514,619	1,130,129
Coke of Coal and Petroleum	21,816	34,464	10,116	101,573	160,463	114,943	(125,999)	(104,827)
Electricity	478,875	756,517	1,228,431	1,809	2,858	2,458	753,659	1,225,973
Total Energy	5,130,572	8,105,169	11,400,456	1,392,146	2,199,283	1,932,472	5,905,886	9,467,984

Statistics Canada, External Trade Division Annual (Raw Customs Basis), 1984.

1. Current dollars.
2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

of Canadian electricity production is exported. Electricity trade takes two forms: short-term interchanges, which is the periodic supply of one market by another to deal with short-term shortages and surpluses; and longer-term sales, which are negotiated when a province has excess capacity built into its supply grid. The American market for Canadian short-term and long-term sales is expected to increase in the near future because of rising oil prices and financial problems with U.S. nuclear plants.

As illustrated in Table 2, Canadian tariff levels in the energy sector are minimal. One can draw this conclusion by comparing the duty-free value of imports from the U.S.A. with Canada's total energy imports from that country. The overall duty rate is only 0.0045 per cent. In 1978 and 1983, the percentages of energy commodities that entered Canada on a duty-free basis were 95 per cent and 96 per cent respectively. One product for which tariffs exist but are not commonly used is petroleum. Subject to a Canada-U.S. reciprocal commercial agreement, licensed Canadian petroleum may be admitted free of duty to the United States if an equivalent amount of petroleum has been exported from the U.S. to Canada. Such swaps occur to save transportation costs or to utilize spare production capacity. The one area where Canada enforced a significant degree of tariff protectionism was in "other petroleum and coal products" (which include liquid petroleum, waxes, lubricating oils and greases and penetrating oils). For this group of products, the proportion of American imports that entered Canada duty-free was 29 per cent in 1978 and 77 per cent in 1983. For this

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Energy Sector

(\$ Canadian thousands)

ENERGY SUB-SECTOR	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4)÷(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Coal	632,435	840,008	630,787	836,413	1,648	3,596	284	499	17.2	13.9
Natural Gas	115	219	115	216	-	3	-	-	-	-
Petroleum and Condensates	527,897	422,679	525,118	422,625	2,779	54	-	6	-	11.1
Crude Bitumins	1,266	999	1,046	432	219	567	24	57	10.9	10.1
Gasoline and Fuel Oil	30,371	233,198	29,991	233,156	381	42	45	5	11.9	12.0
Other Petroleum and Coal Products	96,680	317,968	27,594	245,600	69,086	72,368	9,252	8,206	13.4	11.3
Coke of Coal and Petroleum	101,573	114,943	101,532	114,943	41	-	5	-	11.1	-
Electricity	1,809	2,458	1,809	2,458	-	-	-	-	-	-
Total Energy	1,392,146	1,932,472	1,317,991	1,855,842	74,155	76,630	9,609	8,773	13.0	11.5

Statistics Canada, External Trade Division, 1984.

* It is worthwhile to note that the tariff rate figures for all items excepting "Other Petroleum and Coal Products" are practically meaningless because of their insignificant levels of dutiable value.

group, the rate of protection was 13.4 per cent in 1978 and 11.3 per cent in 1983.

In Table 3, one can see official tariff levels (MFN) that are applied by Canada and the United States on energy products. Some differences occur, notably the levels of protection placed upon petroleum waxes and asphalt. Canadian rates of protection for these products are 12.9 per cent and 8.0 per cent respectively, while these products enter the U.S. duty-free.

There are few non-tariff barriers in the energy field, although Canada regulates the industry heavily. Non-tariff barriers refer to barriers established by a country to keep out imports. Canadian regulatory mechanisms are in place to ensure a secure energy supply, which is accomplished by monitoring and restricting Canadian energy exports. The rationale for such mechanisms, e.g., the National Energy Board's licensing of energy exports, is (a) to prevent a wholesale corporate diversion of non-renewable energy resources away from Canadian markets; and (b) to further the achievement of the long-term goal of Canadian oil self-sufficiency. The export of coal has not been regulated in Canada.

Impact of Free Trade

In a discussion about the potential impact of Canada-U.S. free trade in energy, it is worthwhile to consider a hypothetical link between trade and the National Energy Program and the National Energy

Table 3

**Selected Products in the Energy Sector:
Canadian and United States Tariffs (1984)**

PRODUCT	Canadian Tariff	American Tariff
Petroleum (crude) /	.50¢/gallon	.25¢/gallon
Natural Gas	Free	Free
Coal	Free	Free
Coke	Free	Free
Lubricating Greases	13.4%	7.4¢/gallon
Petroleum Waxes (e.g. Paraffin)	12.9%	Free
Asphalt	8.0%	Free
Fuel Oil	Free	1.25¢/gallon

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No.21 (16th edition) 1983-84.

Board. First of all, if regulatory and fiscal restraints that have evolved in the energy field were not changed the impact of free trade would be minimal, except perhaps in the sub-sector that produces lubricating oils and greases. Tariffs for energy are already insignificant, and there is an open market for available Canadian energy in the U.S. There is currently a potential American NTB being considered by North Dakota, which would levy a "Privilege Tax" on Canadian natural gas. Its purpose is to encourage the development of regional gas reserves. The current trade surplus that Canada experiences with the United States would not be harmed by bilateral free trade, but neither would it improve dramatically. Supply and security are the key linchpins of energy trade: supply in the sense of having an exportable surplus (from the Canadian view), and the assurance of having secure energy sources (from the American view).

The case might be different if non-tariff barriers on both sides of the border were eased. The government, however, evaluates the costs and benefits of such a step to the Canadian economy in terms other than just trade policy. If it became easier for firms operating in Canada to export natural gas to the U.S. market, through the easing of American regulatory controls; or the termination of the Canadian government's energy export licensing procedures, it is likely that over the long term Canada would develop a much higher trade surplus with the U.S. in this sub-sector. The petroleum sub-sector could recognize some benefits as well. Production could increase, exploration programs could be expanded, economies of scale might improve, a labour boom could occur,

and more investment (Canadian and American) could be directed toward this industry.

Such a scenario would be more attractive if it was to occur in a resource sector that had a higher proportion of Canadian control. Canadian concerns about foreign control over the energy sector are well-documented and need not be dealt with in depth here. However, it is certainly relevant to look at the possible negative impacts of deregulation upon the sector.

If excess Canadian energy was to be exported at a faster rate than new supplies become available and, if, future supplies (e.g., tar sands) were to become more expensive to find and process, then a short-term flow of energy to the United States that would result from a regulation-free trade arrangement would directly contradict the government policy goal of energy self-sufficiency. The Canadian priority of ensuring a secure energy supply would be defeated.

Another relevant concern is that of environmental damage. To export electricity and non-renewable energy resources at an unrestrained pace would be to risk the hazard of an equally unchecked rate of environmental destruction.

Conclusion

It appears that most, if not all, of the energy sector is in favour of a movement to freer trade, i.e., tariff-free trade, and most of the

foreign-owned firms are in favour of dismantling the regulatory system that checks the levels of Canadian energy exports to the U.S.A. Of course, such an action would go beyond trade policy alone. However, a more restricted free trade arrangement, which involved only the slightest of changes in the current tariff levels, would not cause political or economic problems. It would, in fact, for most sub-sectors, be a case of transforming an already existing, de facto situation into a more formal de jure arrangement.

Appendix

Energy Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Coal	261	261
Natural Gas	26431	26431
Petroleum and Condensates	26410	26410
Crude Bitumins	26432,26499	26499
Gasoline and Fuel Oil	431-432	431-432
Other Petroleum and Coal Products	433,439	433,439
Coke of Coal and Petroleum	435	435
Electricity	497	497

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-202.

TEXTILES, CLOTHING AND FOOTWEAR

Description

The Canadian textile, clothing and footwear sector has been the subject of numerous studies in recent years. Nevertheless we took a brief although thorough look at its nature and trading performance so that the consequences of a free trade arrangement with the United States can be assessed.

This sector is divided for the purpose of our study into textiles (fibre, yarn, thread, twine, felt; fabrics; and other textile products), clothing (underwear, sleepwear, and hosiery; outerwear; and headwear, gloves and miscellaneous apparel), and footwear (raw materials; leather and synthetic footwear; and rubber and plastic waterproof footwear). The industries expressed some concern that our categories did not correspond with their perceptions. The major distinction is that leather and fur have been assigned according to their end use - clothing or footwear - rather than being left in a separate sub-sector. Similarly we used end products to categorize knitted materials. Statistics Canada classifies all knitters as a single group although some firms consider themselves part of the textile industry and others part of the clothing industry. This particular sector study does not include skates as a footwear item. They are considered as part of the Recreational Items sub-sector and are to be found in the Miscellaneous Consumer Goods chapter.

The textiles, clothing and footwear sector is very diverse in nature. Discussion revolves more around the sub-sectors than around the conglomerate grouping of the sector, since the common elements are few. The textile, clothing and footwear industries have large concentrations of small establishments (fewer than 20 employees). The Canadian Industrial Renewal Board (CIRB) indicates, perhaps surprisingly, that there are proportionately more small textile establishments (53 per cent) than clothing establishments (47 per cent), which produce a smaller share of industry output (4 per cent) than do the small clothing establishments (11 per cent).

In general, the textile industry is in a better competitive position than the clothing or footwear industries, for it is highly capital-intensive (the CIRB states that capital stock per employee is \$66,000) and it has integrated technological development effectively. Economies of scale and mass production are found in both yarn and cloth mills and in man-made fibre production, where over 1000 people may be employed at a plant. Although the industry is heavily dependent upon the Canadian clothing industry's demand, more than half of its output goes to some 150 industries including the automotive, furniture, agriculture, paper-making and road construction industries. Problems of excess capacity occur in parts of the textile sub-sector, namely the man-made yarn spinning, knitting and more specialized areas.

The Canadian textile, clothing and footwear industries provide a full range of goods for the consumer. The textile industry is involved in the production of fibres and yarns; cotton wool and yarns; woven and

knitted fabrics; thread, cordage and twine; carpets, mats and rugs; and sheets, pillowcases, towels, blankets and bedspreads. The clothing industry produces men's, women's and children's clothing, fur goods, foundation garments, gloves, hats, caps and hosiery. Finally, the footwear industry produces men's, women's, children's and infant's footwear, slippers, and athletic and special purpose footwear.

Both the clothing and footwear sub-sectors have very labour-intensive productive processes and underutilized capacity. Capital stock per employee was \$7,500 and \$15,000 for the clothing and footwear industries respectively, according to the CIRB. Since they must respond to a rapidly-changing consumer demand, they both have flexible production processes. Both industries can adapt quickly to both demand and technological change since it leases a high proportion of its capital equipment. These industries tend to have a domestic orientation. The textile and clothing sub-sectors are protected from competing imports from low-wage countries through tariffs, the Multifibre Arrangement and by global footwear quotas imposed by the Canadian government. Considerable direct government financial support has also been given to this sector.

The textile industry's employment level averaged 88,200 workers from 1977 to 1981, and was 81,000 in 1981. The clothing industry employed 96,000 people in 1981; a figure that decreased to 86,000 in 1983. In the latter year, the footwear industry employed 15,000 workers. The figure for the textile industry, which is noted for its capital-intensive production processes, seems quite high in comparison

with the clothing industry's similar employment statistic. It must be recalled, however, that the textile industry enjoys more links with other industries and is considerably larger in terms of share of gross domestic product (GDP) than the clothing industry. The Textile and Clothing Board states that from 1980 to 1982, the Canadian textile industry's share of all manufacturing industries' GDP was 3.3 per cent, while the comparable share for the clothing industry was 0.8 per cent.

The regional distribution of industry is one of several elements common to the three sub-sectors; high concentrations of textile, clothing, and footwear firms are found in Ontario and Quebec. In 1982, 40 per cent of textile establishments and 59.6 per cent of employees were located in Quebec; 42 per cent of establishments and 26 per cent of employees were in Ontario, while 18 per cent of establishments and 7.1 per cent of employees were located in the rest of Canada. The footwear industry is slightly larger in Ontario (48 per cent of firms) than in Quebec (45 per cent), but the clothing industry is concentrated in Quebec (68 per cent compared with 23 per cent in Ontario). While there are viable textile, clothing and footwear firms operating outside of Ontario and Quebec, the health of this sector is, nevertheless, primarily a central Canadian concern.

The extent of unionization in the three subsectors is also comparable. The majority of workers in textiles, clothing and footwear production are unionized. In the textile industry, unionization is concentrated in the large firms and in the area of man-made fibres.

Union-management relations generally have been very good, and there have been few work stoppages in the past twenty years.

Trade and Protectionism

The following tables present information on trade with the United States for 1978 and 1983, the levels of Canadian tariff protection on American textiles, clothing and footwear, and a list of comparable Canadian and American tariffs for common products from this sector.

The three sub-sectors have fared differently in trade with the United States. Canada has experienced a decreasing bilateral trade deficit in textiles, which declined from \$1 billion in 1978 to \$858 million in 1983. The clothing industry's trade position changed from a deficit of \$96 million in 1978 to a \$46 million surplus in 1983. The footwear industry maintained a surplus over this period, but moved into a moderately weaker position from \$25 million to \$19 million. Overall, the sector's deficit with the U.S. decreased from \$1.0 billion to \$792 million.

In the clothing sub-sector, the export performance of the underwear, sleepwear and hosiery category remains weak. Its deficit was \$19 million in 1978 and \$12 million in 1983. The other two clothing categories headwear, gloves and miscellaneous apparel improved its balance from a deficit to a surplus and outerwear remained in a surplus position.

Table 1
Canadian Trade with the United States, 1978 and 1983:
Textiles, Clothing and Footwear Sector
(\$ Canadian thousands)

Subsector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
<u>Textiles</u>								
thread, fibre, yarn, felt, etc.	21,135	33,389	49,676	192,244	303,703	326,440	(270,314)	(276,764)
fabrics	45,033	71,142	77,933	444,374	702,013	577,650	(630,871)	(499,717)
other textile products	7,430	11,738	28,344	83,608	132,082	109,706	(120,344)	(81,362)
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Textiles-subsector total	73,597	116,267	155,953	720,226	1,137,798	1,013,796	(1,021,531)	(857,843)
<u>Clothing</u>								
underwear, sleepwear, hosiery	409	646	1,169	12,435	19,646	13,051	(19,000)	(11,882)
outerwear	57,623	91,032	75,653	39,398	62,240	60,426	28,792	15,227
headwear, gloves, misc. apparel	33,530	52,970	109,617	100,421	158,643	66,567	(105,673)	43,050
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Clothing-subsector total	91,562	144,648	186,440	152,254	240,528	140,044	(95,880)	46,396
<u>Footwear</u>								
footwear raw materials	15,892	25,106	23,775	17,861	28,216	19,651	(3,110)	4,124
leather and synthetic footwear	35,981	56,842	41,379	17,639	27,866	25,878	28,976	15,501
rubber and plastic footwear	269	425	873	609	962	1,080	(537)	(207)
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Footwear-subsector total	52,142	82,373	66,026	36,108	57,043	46,609	25,330	19,417
<u>Total Textiles, Clothing and Footwear</u>	217,301	343,288	408,419	908,589	1,435,370	1,200,449	(1,092,082)	(792,030)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars.

2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars

The footwear industry saw a significant performance improvement in the category of footwear raw materials. Its trade balance with the U.S. moved from a 1978 trade deficit of \$3 million to a 1983 trade surplus of \$4 million, which was essentially based upon a significant decline in imports which fell from \$28 million in 1978 to \$20 million in 1983. Footwear exports to the U.S. have shown some strength. The Shoe Manufacturers Association of Canada has indicated that winter footwear, and boots, and moccasin-type footwear exports to the northern U.S. have increased.

The American market is becoming very important for Canadian textiles and clothing exporters. Textile and Clothing Board research has shown that roughly one-half of textile exports and two-thirds of clothing exports went to the U.S. in 1983. The United States also exports considerable quantities of textiles to Canada. Sixty per cent of fibres, yarns and fabrics imported to Canada come from the U.S. The Canadian market accounts for between one-quarter and one-third of American exports. The Canadian market for American clothing is, however, much smaller. Approximately 10 per cent of Canadian imports of clothing are American-made. Canada exports primarily low unit-value textiles and high unit-value clothing to the U.S., while it imports high unit-value textiles and low unit-value clothing from that source.

The level of Canadian tariff protection is of considerable interest, for it illustrates that while the overall average tariff rate on textiles, clothing and footwear decreased only slightly from 21 per cent to 20 per cent between 1978 and 1983, the proportion of

total Canadian imports from the U.S. that entered duty-free rose from 10 per cent to 20 per cent.

The average tariff levels for textiles and footwear dropped very slightly in the 1978-1983 period from 22 to 20 per cent and 22 to 21 per cent respectively. The large anomaly is found in the clothing sub-sector, which had the nominal tariff rate rise from 18 to 21 per cent. This increase is a reflection of a simultaneous decrease in dutiable imports of headwear, gloves, etc. (a lower-tariff item) and a rise in the volume of dutiable imports of outerwear (a higher-tariff item). It is not indicative of an overall rise in tariffs for the clothing sub-sector.

The manner in which the United States and Canada categorize the commodities for the purpose of applying tariffs differs considerably. The Canadian customs tariff is simpler to apply; it contains approximately 300 tariff items for textiles and clothing. The classification for footwear is also very straightforward. But as the Textile and Clothing Board points out, the American customs tariff schedule is considerably more complex. The U.S. makes distinctions between ornamented (higher tariff) and non-ornamented (lower tariff) garments, between methods of manufacture (for shoes), types of processing, and types of fibre. Generally, the United States protects its wool and man-made fibre products with higher tariffs than it does cotton products (see Table 3).

Table 2
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Textiles, Clothing and Footwear Sector
(\$ Canadian thousands)

Sub-sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(A) ÷ (3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
<u>Textiles:</u>										
Fibre, yarn, thread, twine, felt, etc.	192,244	326,440	41,219	90,205	151,026	236,235	20,727	29,427	13.7	12.5
Fabrics	444,374	577,650	28,120	126,868	416,254	450,782	101,655	105,086	24.4	23.3
Other textile products	83,608	109,706	5,423	5,410	78,185	104,296	19,010	23,532	24.3	22.6
Textiles-subsector total	720,226	1,013,796	74,762	222,483	645,464	791,313	141,392	158,045	21.9	20.0
<u>Clothing:</u>										
Underwear, sleepwear, hosiery	12,435	13,051	144	343	12,291	12,707	2,914	2,890	23.7	22.7
Outerwear	39,398	60,426	237	576	39,162	59,851	10,034	15,026	25.6	25.1
Headwear, gloves, miscellaneous apparel	100,421	66,567	6,032	9,662	94,389	56,905	13,550	9,089	14.4	16.0
Clothing-subsector total	152,254	140,044	6,413	10,581	145,841	129,463	26,497	27,005	18.2	20.9
<u>Footwear:</u>										
Footwear raw materials	17,861	19,651	6,312	6,654	11,549	12,997	1,958	1,896	17.0	14.6
Leather and synthetic footwear	17,639	25,878	544	1,337	17,093	24,540	4,274	5,838	25.0	23.8
Rubber and plastic waterproof footwear	609	1,080	3	13	606	1,065	129	231	21.3	21.7
Footwear-subsector total	36,108	46,609	6,860	8,006	29,248	38,603	6,361	7,965	21.8	20.6
Total Textiles Clothing and Footwear	908,589	1,200,449	88,035	241,069	820,554	959,379	174,251	193,015	21.2	20.1

The major American non-tariff barriers include the Buy America Act of 1933 with its amendments; Department of Defense legislation; local procurement policies; a complex system of tariff protection; and the Domestic International Sales Corporation's activities.

Under the Buy America Act of 1933 federal agencies give a six per cent preference to domestic suppliers. This preference may rise to 12 percent if tenders are submitted by small firms, firms owned by minority groups, or firms located in regions of high unemployment. Legislation passed in 1978 grants such firms between 5 and 15 per cent of tendered government purchases. The Berry Amendment stipulates that the U.S. Department of Defence must purchase only textile and clothing products made in the U.S. A significant number of states (at least 34) and local governments in the U.S. apply preferential purchasing policies as well.

Finally, the existence of large numbers of tariff items in the U.S. schedule causes significant concern for Canadian exporters to the American market. The classification system is intricate, if not byzantine, and as such, gives the U.S. customs official considerable discretion in categorizing a particular item. The Canadian Textile and Clothing Board is of the opinion that such decisions may be somewhat arbitrary and could adversely affect commercial enterprises and lead to lengthy and costly litigation.

There are few applicable Canadian non-tariff barriers to American textiles, clothing and footwear. The major ones are labelling

Table 3

**Selected Products in the Textiles, Clothing and Footwear Sector:
Canadian and United States Tariffs, 1984**

Product	Canadian Tariff	American Tariff
100% Cotton		
yarn - for knitted underwear, undyed	15%	5.9%
fabric - corduroy, dyed	18.8%	30.5%
towels - not ornamented	22.5%	12.8%
- ornamented	22.5%	22.6%
knit shirts, blouses, sweaters		
- not ornamented	26.3%	21.0%
- ornamented	26.3%	28.0%
Wool (wholly or in part)		
yarn, dyed	11.2%+5¢/lb.	13.5%
fabric, valued between \$2.00 and \$9.00/lb.	25%+12.5¢/lb.	38%+30¢/lb.
men's woven suits (over \$4.00/lb.)		
- not ornamented	25.0%	21%+31¢/lb.
- ornamented	25.0%	34.1%
women's woven suits (over \$4.00/lb.)		
- not ornamented	25.0%	19%+19¢/lb.
- ornamented	25.0%	34.0%
Man-made fibre		
yarn, dyed (single yarn, less than 20 turns/inch, valued at more than \$1.00 per lb.	10%+7.5¢/lb.	13%
fabric	25%+7.5¢/lb.	19%+6¢/lb.
men's swimwear		
- not ornamented	26.3%	28.8%+12¢/lb.
- ornamented	26.3%	36.3%
ladies' swimwear (over \$10.00 each)		
- not ornamented	26.3%	24.8%+12¢/lb.
- ornamented	26.3	36.3%
Men's leather shoes	23.4%	8.5%
Protective footwear	23.4%	37.5%
Downhill ski boots, plastic	21.9%	6.0%
Canvas shoes with rubber soles values between \$3.00 and \$6.50 per pair	21.9%	37.5% 37.5% + 90¢/pr.

Revenue Canada, Customs & Excise, Customs Tariff, Departmental Consolidation, 1984, Group 11, p. 11; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84; Textile and Clothing Board, Study of the Impact of Potential Free Trade in Textile and Clothing Between Canada and the United States, Final Report, 1984, pp. 29, 30, 32, 33.

regulations, flammability regulations for children's pyjamas, and safety regulations for CSA-approved workboots. In all cases, there are similar standards in the U.S. Canada Post has a domestic procurement policy for its uniforms.

Global footwear quotas have also been applied by the Canadian government, principally to non-North American trade. They were instituted in December 1977, and covered leather and non-leather footwear but not canvas, water-proof plastic or rubber footwear. This quota expired in 1981, and was replaced by a global quota on synthetic and canvas footwear. Quotas on leather footwear were completely brought back in July 1982. Quotas on textiles and clothing were imposed in 1981 as a component of a government assistance program for these industries. The federal government also supported a program which is aimed at improving the sector's fashion design capabilities.

In addition to NTB's the Canadian federal and provincial governments offer financial and technical support to the sector. The Canadian Industrial Renewal Board was formed in 1981. Part of its mandate is to assist in the restructuring of the textile, clothing and footwear industries, and to provide assistance to the communities in which these industries play a preponderant role by diversifying their economic bases by helping new firms get started. Adjustment assistance for labour is provided by the Canadian Employment and Immigration Commission.

Canada is a signatory to the Multifibre Arrangement Regarding International Trade in Textiles which was started in 1974, and has been renewed in 1977 and 1981. The arrangement permits bilateral agreements on trade restraint to be negotiated. In 1982, restraint arrangements (or quotas) were in force between Canada and 18 low-cost countries and there are now 21 such arrangements. In contrast, the U.S. restricted textile and clothing imports from 26 countries in 1982.

The provincial governments also support the sector. Quebec operated "Innovation Chaussure" from January 1979 to December 1982 and has had similar programs for textiles and clothing. Ontario offers loans to individual firms through the Ontario Development Corporation.

It can be seen that the Canada-U.S. trading environment in textiles, clothing and footwear is very well protected. Government involvement, through the mechanisms of export restraint agreements, quotas, tariffs, procurement and industrial support makes speculation about the effects of free trade upon this sector an interesting exercise.

Impact of Free Trade

When examining the consequences of global free trade on the Canadian textile clothing and footwear sector, no doubt remains that the constituent industries would falter under competitive pressure exerted by low-wage countries--particularly those countries with whom Canada has negotiated bilateral export restraint agreements for textiles and

clothing under the MFA. Under a Canada-U.S. free trade arrangement, however, the diagnosis is neither so simple nor so gloomy. It is in this sector that one will definitely find "winners" and "losers" whose level of success in adapting to free trade would be less dependent upon the commodity that they produce than upon the risks that they can afford to take.

The major concern to Canadian manufacturers in these sub-sectors is that their domestic market, in a free trade arrangement, would be quickly overrun by American products that have the advantages of easily-recognizable trademarks (most likely for clothing and household textiles) and an already-efficient marketing structure. The Canadian firms fear that they would subsequently falter in the wake of such competition. They acknowledge that the promise of access to the American market should be a lucrative temptation, but unless the Canadian manufacturers are given an advantageous early tariff-free entry into this market, they maintain that the arrangement would be biased toward American firms that can enter and capture the Canadian market to the detriment of the Canadian producer.

The underlying concern that was expressed by the industries was that a significant adjustment would have to be made to accommodate a free trade arrangement. Some job losses were considered to be inevitable, for the import-substitution method of production would not be efficient if tariffs were removed. While only a small percentage of textile firms are foreign-owned, it is anticipated that many of these firms who are committed to standard production methods will divest their

assets and rationalize their production south of the border in order to service the Canadian market from the U.S. This action would be taken to derive direct benefits from the overall package of lower wage, overhead, marketing and administration costs in the U.S. Foreign-owned firms that are in a strong competitive position would not be so likely to close--rather, they would probably specialize their production, provide world product mandates and service a regional market.

In the long run, it is anticipated that regional benefits may develop, as the Canadian textile industry reorients itself from an east-west perception of market regions to a north-south perception. It was hypothesized by an industry representative that under a free trade arrangement, a textile firm in British Columbia could service the western United States better than could a New York firm.

Therefore, views vary within the textile industry from opposition to interest (but not unconditional approval) about a movement toward Canada-U.S. free trade. Many significant and disruptive adjustments (e.g., large layoffs, plant closures), would need to be made by the Canadian industry that would not necessarily affect the American industry's health at all.

The clothing sub-sector would be in much the same position as the textile sub-sector if Canada-U.S. free trade was introduced. Adjustment concerns are a significant barrier to an acceptance of free trade, especially for the companies that specialize in standard products like jeans and T-shirts. However, the clothing industry accepts that such an

adjustment is more feasible for it than for the textile industry because of its fashion orientation for which changes in production processes are made regularly. Canadian companies that emphasize product and service quality as well as flexible production stand a good chance of success for they will be able to establish market niches.

Canadian firms that produce under American or third-country licences have a special worry. If free trade is introduced, such licences would not likely be renewed since it would be easier and cheaper to provide the brand names that these licences carry from production facilities in the USA. Some effort was made to establish the number of firms that manufacture brand names through such licensing but the data was not available.

Labour dislocation is more of a concern to the clothing industry than to the textile industry. The smaller, non-exporting firms are concentrated in Quebec, especially in the Montreal area, and it is hypothesized that the bad effects of free trade will be experienced here first. However, it has been speculated by industry exporters that employment might increase in firms that can capture a niche in the American market.

Many clothing firms want free trade so that they can sell their products at a lower cost in the large American market. For them, the prospect of a wide range of retailers, raw materials and consumer tastes spells success. Access to tariff-free American textiles, according to the Textile and Clothing Board, would represent a saving of 3 to

6 per cent to the clothing industry. Both the textile and clothing industries want increased market access to the United States--for that reason, some members in both sub-sectors view free trade as being a fair business risk, even though the final price for their product would be reduced by the amount of tariff protection they had previously received. Considerable support by the Canadian government is anticipated by the two industries, both in the area of negotiating a free trade arrangement that would give the Canadian firms a chance to compete, and in the area of providing marketing assistance in the American market.

The footwear industry, in the view of a government official interviewed, should be prepared to compete in a free trade environment with American producers. It is a mainly Canadian-owned industry, and has received considerable federal and provincial support to make it competitive. It is estimated by the federal government that production of footwear in Canada would increase if freer trade was introduced, but that freer trade would force the closure of some of the smaller, less-efficient firms. Parts of the industry do not support this view, however, for they feel that they are already fighting for their lives against imports from low-cost countries. The United States is seen as providing a tough potential market for Canadian footwear, for there the Canadian producers will be encountering both American product competition and low-cost imports that are not subject to import restrictions.

The footwear industry, therefore, does not see itself as being adequately competitive to do better business in the U.S.A. in a free trade environment, but opinion in the federal government expresses confidence that it would do well, especially if provided with export assistance and trade adjustment assistance. In this sub-sector, more detailed analysis needs to be done.

The sector, as a whole, therefore, may be able to benefit from Canada-U.S. free trade. It will do so, however, only at the cost of firm closures and job losses, considerable continuing government support and a potential reorientation of the entire sector in North America.

Conclusion

This sector is divided in its acceptance of free trade with the United States as a policy option. The textile industry maintains that certain conditions must be acknowledged before a discussion of free trade is entered into, namely, that (1) external trading conditions must first be harmonized between Canada and the U.S.; (2) an adjustment period must be allowed for the Canadian industry; (3) the U.S. must remove its tariffs on textiles and clothing before Canada would start to remove tariffs--the Canadian tariff would decline progressively from that point; and (4) the tariffs would be reduced at a pre-determined rate for both textiles and clothing, without a prior sequential reduction for textiles.

The clothing and footwear industries are internally divided on their acceptance of the free trade option; those firms that would be successful with a freer North American market are more favourably disposed to this alternative than are those firms who would fail.

The three sub-sectors share a common worry--that without a transition period, the industry could be thrown into chaos. Even with such a period, however, it is certain that many jobs will be lost in the least-efficient firms. It is believed that replacement jobs could be created by the firms that can undoubtedly compete in the American market. Therefore, if Canada-U.S. free trade is introduced, it must be approached prudently in this sector so that a minimum of disruption occurs.

Appendix

Textiles, Clothing and Footwear Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Thread, Fibre, Yarn, / Felt, etc.	246,360-369	246,363-369
Fabrics	371-389	371-389
Other Textile Products	844-849	844-849
Underwear, Sleepwear, Hosiery	781,785	781,785
Outerwear	783-784	783-784
Headwear, Gloves, Misc. Apparel	304,308-310,786-789	304,308-310,786-789
Footwear Raw Materials	301-303, 492	301,492
Leather and Synthetic Footwear	791-793,798	791-793, 798
Rubber and Plastic Waterproof footwear	794	794

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-202.

CHEMICALS AND PETROCHEMICALS

Description

The industries of the petrochemicals and chemicals sector bear an importance to Canada which is not wholly represented by a simple enumeration of production and trade statistics. These industries play a pivotal role in the economy by adding value to raw materials through the production of intermediate goods which in turn serve as key inputs to the manufacturing processes for end products. Petrochemical production offers the means to upgrade energy resources for export, as well as providing the basic "building blocks" for more advanced manufacturing industries such as plastics. Chemicals are critical to the productivity of primary, renewable land resources; both forest and agricultural industries are enhanced by the fertilisers and pesticides produced by the sector.

We have divided the sector into six components:

(1) petrochemicals; (2) agricultural chemicals including nitrogen-based fertiliser and pesticides; (3) inorganic chemicals; (4) organic and specialty chemicals; (5) intermediate and end products; and (6) pharmaceuticals. Our sub-sector definitions closely parallel Statistics Canada criteria and are somewhat more expansive than industry definitions. For example, the petrochemical industry defines itself as including all processes up to the production of synthetic resins, but excludes any compounding and fabricating activities such as plastic

sheet and film (which are seen as part of the "plastics processing industry") or pigments and dyes. The "end products" portion of our fifth category is somewhat misleading in that it only includes products such as paints which can be consumed at that level of processing. The boundaries of the sub-sectors are further clouded by the capacity to produce the same chemical in different ways; for example, sulphuric acid may be produced as a by-product of natural gas processing or it may be recovered during the smelting of ores. In sum, our definition does not vary significantly from other categorizations -- the largest difference with industry calculations is in petrochemicals where our export total is about \$50 million (5.6%) greater than the trade association total.

The structure of the sector has undergone significant change over the past decade, with the most marked transformation in the petrochemicals as this grouping has changed from a petroleum feedstock industry based in Sarnia and Montreal to a modern industry with increasing use of natural gas feedstock and a new Alberta base for large amounts of production. Accompanying, and in some cases driving, this change is the transformation of an industry geared to meeting domestic demand to export-oriented, world-scale production facilities. Fortuitous increases in energy prices have made construction decisions taken a decade ago look prescient and allowed the diversification of product markets further beyond the confines of North America than might have been the case otherwise.

The inorganic chemical sub-sector has experienced significant export growth as a result of the comparative advantage Canada has in two

of the key inputs to this industry -- cheap electricity and proximity to abundant raw materials -- and because of the relative weakness of the Canadian dollar which has resulted in the U.S. taking an increasing proportion of Canadian inorganic exports.

The organic and specialty chemical sub-sector tends to be small-scale and oriented to the domestic market. The sub-sector exports less than one-fifth of its production and imports supply more than half of the Canadian market. The main problem in this industry is the diverse product mix in which Canada does not enjoy any significant advantage. (Raw materials tend to be widely available and easily transported and energy costs are not as significant as in the production of inorganic chemicals.)

In the agricultural chemicals sub-sector trade in fertilisers is virtually duty free, having been liberalized at the same time that the tariff walls were lowered on farm machinery. In pesticides, the industry claims that Canada has generally had low tariffs while other trading partners have not reciprocated; thus, Canada's industry has been left to formulate end-products with active ingredients that are over 95 per cent imported.

In pharmaceuticals, Canadian production is limited almost entirely to the domestic market. While the 1969 changes to the Patent Act encouraged the production of generic drugs, the generic group is less than 10 per cent of the industry. The range of products and the cost of

bringing a drug onto the market has resulted in the Canadian industry being primarily limited to market or technological niches.

The petrochemical and chemical sector, as a whole, is characterized by large firms and significant levels of foreign ownership, both of these phenomena being most evident in the capital intensive petrochemical industry. The significant exceptions are in the organic and specialty chemical industries where the small, fragmented market has resulted in many small producers, most of them Canadian-owned.

The total labour force in the sector is over 85,000 including manufacturers of chemical products. The direct employment by chemical manufacturers is about 30,000. Wages and salaries are generally about 40 per cent above the manufacturing average, a reflection of the highly skilled and highly educated work force. Labour costs are a relatively small component of overall costs because so many of the industries are very capital intensive. Labour is a significant factor in construction costs -- and construction is a major indirect labour impact for the sector. In addition, downstream users of chemicals, such as textiles, are very labour intensive. The industries of the sector do not tend to be too highly unionized.

Trade and Protectionism

The petrochemicals and chemicals sector is highly differentiated with respect to the importance of trade and export-orientation. The newly restructured petrochemical industry, with more than 25 per cent of

industrial capacity less than five years old, is now exporting about 40 per cent of capacity and domestic production now exceeds domestic demand. In the last few years, Canada has moved into an trade surplus position for petrochemicals. However, the figures in Table 1 tend to obscure this because so many of our imports still come from the U.S. (There is also reputed to be significant overstatement of imports from the U.S. because of the brokerage system under which many petrochemicals are traded and the methods of data collection.) While the U.S. remains the dominant market for all chemicals, it is interesting to note that less than 30 per cent of Alberta petrochemical exports go the U.S. (compared to 53 per cent for the country as a whole).

This sector's trade balance showed a real improvement of about 10 per cent over the five-year period with most of the strength originating in the petrochemical sub-sector. Nominal trade turnover increased from \$3.7 billion to \$6.5 billion in the period with the largest increase again coming in the petrochemical sub-sector.

Table 2 shows that agricultural and organic and specialty chemicals have significant duty free access to the Canadian market. Tariff levels have generally fallen over the five-year period with the overall calculated rate on dutiable imports falling 1.5 per cent to 11.4 per cent in 1983. The average rate of duty collected on total imports declined from 6.85 per cent to 5.4 per cent in 1983. Predictably, the highest levels of tariff are on imports of more highly processed intermediate and end products. Almost 80 per cent of the total duty collected comes from the 60 per cent of imports in the petrochemical and

Table 1
Canadian Trade with the United States, 1978 and 1983:
Chemicals and Petrochemicals Sector
(\$ Canadian thousands)

Subsector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Petrochemicals	351,972	556,038	920,032	715,153	1,129,784	1,199,170	(573,746)	(279,138)
Agricultural Chemicals	578,882	914,506	785,905	199,973	315,913	345,908	598,593	439,997
Inorganic Chemicals	494,879	781,799	783,443	218,017	344,419	313,308	437,380	430,135
Organic and Specialty Chemicals	22,206	35,086	43,248	120,447	190,280	310,818	(155,194)	(267,570)
Intermediate and End Products	117,593	185,771	362,008	631,463	997,572	1,085,613	(811,801)	(723,605)
Pharmaceuticals	21,034	33,229	53,522	178,080	281,327	332,112	(248,098)	(278,590)
Total Petrochemicals and Chemicals	1,586,566	2,506,423	2,908,157	2,063,132	3,259,292	3,586,929	(752,869)	(678,772)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars.

2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

Table 2
Canadian Imports from the U.S. and Canadian Tariff Protection, 1978 and 1983:
Chemicals and Petrochemicals Sector
(\$ Canadian thousands)

Subsector	(1) Total Imports		(2) Duty Free Imports		(3) Dutiable Value		(4) Duty Collected		(4)÷(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Petrochemicals	715,153	1,199,170	307,801	498,536	407,351	700,635	43,727	75,180	10.7	10.7
Agricultural Chemicals	199,973	345,908	197,213	343,612	2,760	2,297	251	223	9.1	9.7
Inorganic Chemicals	218,017	313,308	91,524	176,605	126,494	136,703	17,915	15,243	14.2	11.2
Organic and Specialty Chemicals	120,447	310,818	82,526	253,759	37,922	57,059	5,460	7,255	14.4	12.7
Intermediate and End Products	631,463	1,085,613	213,683	448,253	417,779	637,361	62,523	85,868	15.0	13.5
Pharmaceuticals	178,080	332,112	74,179	170,032	103,900	162,080	11,488	18,073	11.1	11.2
Total Petrochemicals and Chemicals	2,063,132	3,586,930	966,927	1,890,796	1,096,205	1,696,134	141,362	193,512	12.9	11.4

Statistics Canada, External Trade Division, 1984.

intermediate and end product sectors. Ironically, for Canadian petrochemicals entering the US, the rates of duty are often higher on the least processed products. For example, rates of duty are higher on petrochemicals and resins than they are on plastic goods, thus, there is an incentive for upgrading in Canada.

The comparison of tariffs on selected trade items in Table 3 indicates that the U.S. seems to have somewhat higher tariffs overall, however, as we saw in Table 2, Canada derives significant revenues from duties on this sector.

Industry spokesmen claim that non-tariff barriers (NTBs) are not an issue with the exception of individual shipments which may be singled out for discriminatory treatment. This finding is not surprising given the level of U.S. duties -- the tariffs are high enough to discourage a great deal of trade on their own. There have been periodic attempts to act against Canadian imports, such as the Gibbons Bill in the House of Representatives last year which proposed to make imports of products made from resources with a two-price system subject to countervail. These actions, or the threat of such actions, serve to increase uncertainty and hinder investment.

The Americans have a series of complaints about pricing of energy feedstocks and development incentives which, they claim, distort the competitiveness of the market. The pricing complaints are the most serious because they strike at the heart of the ability to make policy in the national interest -- whether or not that policy makes economic

Table 3

Selected Products in the Petrochemicals and Chemicals Sector:
Canadian and United States Tariffs, 1984

Product	Canadian Tariff	American Tariff
styrene	10.3%	0.3¢/lb + 9%
carbon tetrachloride	11.4%	2.3%
ethylene dichloride	11.9%	0.9¢/lb + 4.7%
vinyl chloride	13.4%	13.3%
ethylene oxide (epoxyethane)	11.4%	10.0%
ethylene glycol	10.0%	12.6%
phenol	11.4%	1.3¢/lb + 12.5%
acetic acid	13.4%	1.9%
adipic acid	13.4%	0.7¢/lb + 19.8%
vinyl acetate	4.3%	13.4%
acetaldehyde	13.4%	8.0%
fertilizer chemicals	Free	Free
fungicides	Free	12.2%
ink powder	13.4%	8.1%
semi-synthetic penicillin	Free	4.2%
vitamins: natural, not artificially mixed	10%	0.8%

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21, (16th edition), 1983-84.

sense. Given the steps that have been taken in moving away from the pricing regimes of the National Energy Program and the cost of implementing that program it seems quite likely that this will disappear as an irritant in trade relations. The perceived threat to policy independence is unlikely to disappear given the importance attached to energy in the national psyche.

Provincial and federal regulatory actions have also been the subject of some controversy. While it is generally recognized that energy is a special commodity when it comes to export, the federal pricing of natural gas has been very controversial in the U.S. and provincial policies (Alberta and British Columbia) on resource upgrading have the potential to become issues under a bilateral trade pact.

Impact of Free Trade

There is probably no other sector where the possibility of free trade has been more widely discussed than the petrochemical and chemical sector (particularly with respect to the former). Since the time of the Tokyo Round tariff reductions, it has been on everybody's "wish" list from the Standing Senate Committee on Foreign Affairs to industry briefs to the Petrochemical Industry Task Force Report. Given the level of U.S. tariffs on petrochemicals, it is not surprising that the support is so widespread in Canada. With a relatively new and lean physical plant based on abundant natural gas feedstocks, the Canadian producers seem well placed to increase their exports of basic petrochemical products

and to find market niches for more highly fabricated manufactured goods.

There will obviously be some attraction to the American plastic industry and other groups who are now disadvantaged relative to the higher tariff protection afforded to more basic chemical products. However, the real "kicker" in negotiations would be how far the U.S. insisted on going on harmonization of energy feedstock prices and regulations. Any intimations of a de facto continental energy policy would have severe political repercussions in Canada. Industry representatives in Canada have insisted that they need some sort of concession on feedstock prices (until Canada achieves market-determined prices) to offset the higher construction costs in Canada, colder climate which affects plant efficiency, and higher transportation costs compared to the Gulf Coast industry in the U.S. which can utilize tidewater and the Mississippi River. Estimates of the necessary "cushion" range around the 15 per cent mark. (Feedstock costs are absolutely crucial for petrochemicals since they can comprise up to 60 per cent of the production cost, e.g., ethylene.)

The inorganic sub-sector has been slowly restructuring to become more world competitive, perhaps in a narrower range of products, and free trade would only serve to reinforce and accelerate this trend. As with petrochemicals, a crucial question would be whether the U.S. would make demands related to the cheap hydro costs in Canada which provide much of the comparative advantage for the sub-sector.

The agricultural chemicals group would enjoy improved market access as it could operate under the same non-tariff rules as its competitors now enjoy in Canada. In light of the large market in Canada for agricultural chemicals, it is entirely likely that investment could be attracted to establish a "product mandate" in Canada for high consumption commodities, especially pesticides where the existing investment is limited to formulation.

The major impacts of free trade in terms of jobs and restructuring would involve the small scale and labour intensive parts of the sector today, i.e., the organic and specialty chemicals and intermediate and end product groupings. For the former, many of the small plants built in the 1940s to the 1960s would be threatened as the safety of the tariff wall disappeared. As indicated, there is little locational advantage for this sub-sector, thus, the key to adjustment will be to carve out a market niche to either serve a local market need or specialize. In any case, free trade adjustment will require capital investment and time. The impact on intermediate and end products is likely to be similar with a growing trade deficit and the closure of many inefficient producers. The future for these two groupings may not be as grim as initial judgements would indicate. The U.S. has had some significant tariff barriers in some of these products and as tariffs and NTBs fall there may be opportunities for some producers to expand into the U.S., as the industry is rationalized on a continental basis.

The future of the pharmaceutical industry under free trade is problematical. Health regulations are the primary barrier to trade.

However, where tariffs induced companies to set up branch plants in Canada, some disinvestment may occur. Where there is product mandating and a commitment to research and development, it is feasible that the domestic industry could undergo considerable expansion. Licensing requirements may be such that the structure of the industry may not change that much with the removal of tariffs.

The restructured sector is likely to be more capital intensive and production will probably focus more toward the commodity end of the production spectrum rather than on end products. This is not to say that the net employment impact will be negative, however, since the comparative advantage from the new world-scale, rationalized production could have industrial spinoffs which would provide much more value-added and more high quality jobs. Furthermore, the skilled and mobile labour force should adjust relatively easily without significant retraining.

Finally, the impacts of free trade will be differential in regional terms. Since the groups most affected by the changes, i.e., organic and specialty chemicals and intermediate and end products are concentrated in Ontario and Quebec, the adjustment process will be deeply felt in those two provinces. Furthermore, the changes in the petrochemical industry with the transition to natural gas and ethane feedstocks are also focussed on the former oil-based industry in Montreal and Sarnia.

Conclusion

As expected the sector is somewhat divided on the advisability of movement towards free trade, although the majority of sub-sectors are favourable. Only certain specialty chemical producers are firmly against free trade. This represents some movement to support the initiative since the end of the Tokyo Round. The sense is that the recession caused a lot of corporate rethinking about economic goals and policies and exposed the vulnerability of many industries. The industry has a preference for an agreement which is embedded in legislation to limit the possibilities for erosion of free trade once negotiations are completed. Domestically, this may be a desire to seek a pre-emptive means to halt any NEP-type initiatives. Continentally, it establishes certainty in relations and avoids the wrenching which can occur from sudden new protectionist initiatives in the U.S. Congress.

Politically, the major obstacles have already been mentioned in the discussion of the potential impacts. The perceived threat of a U.S. desire for a quid pro quo in the form of a continental energy policy or some level of harmonization of energy and regulatory policies is bound to raise the nationalist ire in Canada. In the U.S. there is some selling to be done to convince U.S. politicians (particularly in the South) that Canada is not about to build several government-subsidized ethylene plants in Alberta to "swamp" U.S. markets at the very time when new market entrants are challenging from Saudi Arabia.

Given the collective interest in trade relations in the sector it seems like an ideal time to explore in greater depth the implications of movement toward freer trade in chemicals and petrochemicals.

Appendix

Petrochemicals and Chemicals Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Petrochemicals	40607-40664, 40698-40761, 40778-40804, 40813-40929, 40957, 40971-40979, 422-423	406-40964, 423
Agricultural Chemicals	40683, 40687, 416-418	416-418
Inorganic Chemicals	400-405	400-405
Organic and Specialty Chemicals	40765, 40811, 40942-40952, 40959-40965, 40981-40986, 40998-411	409-411
Intermediate and End Products	415, 421, 424-429	421, 424-429
Pharmaceuticals	412-413, 40993-40996, 870-879	412-413, 871-879

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-202.

MACHINERY AND EQUIPMENT

Description

In 1975, the then Department of Industry, Trade, and Commerce completed a study which estimated that the machinery and equipment sector accounted for approximately 6 per cent of total manufacturing production in Canada, 8 per cent of total manufacturing export sales, and 7 per cent of total manufacturing employment. Since 1981, the machinery and equipment sector has experienced a downturn in production and sales. The sector remains, however, a very vital component of overall manufacturing production in Canada.

The Commission has divided the sector into two basic sub-sectors: heavy machinery* and other machinery and equipment**. This definition was obtained from Statistics Canada CITC classifications. Although the CITC categories are commonly used by government and industry for trade statistics, SIC numbers are also very important to the sector in terms

* Includes general purpose industrial machinery; materials handling equipment; special industry machinery; and agricultural machinery and equipment.

** Includes tractors (non-agricultural); heating equipment; safety and sanitation equipment; service industry equipment; and home, garden, and park equipment.

of accounting for domestic production. For example, Mr. Joseph Romanow, President of the Machinery and Equipment Manufacturers Association of Canada (MEMAC), felt that the CITC divisions do not always categorize the sector in the same way that industry does. CITC codes represent commodity classifications which are compiled with data obtained from customs documents. SIC numbers, on the other hand, deal with shipments, not exports. These figures are calculated by questionnaires which are sent out to individual companies. In addition, MEMAC collects statistics from its own members which are often more current than those of Statistics Canada and more accurately represent industry categories.

As with many of the other sectors under examination by the Commission, the machinery and equipment sector is a diverse one. Consequently, it is difficult to make generalizations about it, especially regarding free trade with the U.S. This sector is distinctive, however, for several important reasons. First of all, a significant proportion of the machinery and equipment sector (i.e., heavy, custom-made types of machinery) lags behind the general economy cyclically by 12 to 18 months. If production in the economy is at full capacity and a decision is made to buy equipment, it usually takes 12 to 18 months to fill the order. When there is a recession, the industry is usually filling back orders for 12 to 18 months. When the economy improves, it takes a similar amount of time for customer industries to generate investment capital and for the industry to receive new orders. Secondly, the industry is export-oriented simply because the domestic market is not large enough. Finally, in commodity class items, the Canadian industry is distinctive because it concentrates more on highly

engineered and high quality products as opposed to those involving high volume and economies of scale (i.e. standard products) at the lower end of the price scale.

Based on the categories in the IT&C study of 1975, resource-based machinery has the highest value of shipments. Of the industry's total production of \$5 billion in 1975, approximately 40 per cent consisted of resource-based machinery. A similar percentage of production was plant and industrial machinery and the remainder was service industry machinery. In 1983, industry shipments totalled \$9.9 billion; 42 per cent of that sum was plant and industrial machinery, 32 per cent was resource machinery, and 26 per cent was service industry machinery.*

At its peak in 1980, the machinery and equipment sector employed close to 165,000 people. From 1981 until the present, this number has decreased but some re-hiring is anticipated in the current year. In addition, improved computer control and automation is beginning to have a permanent effect on the industry's employment levels.

* This information was obtained from an official at DRIE. The study by DRIE used SIC categories which give production statistics based on industry groupings. In our study, we chose to use CITC categories based on trade statistics since these were more useful for our purposes in revealing the amount of trade between Canada and the United States.

Of the 2,500 firms in the machinery and equipment sector, industry estimates indicate that 7 per cent have over 500 employees; 30 per cent have between 50 and 500 employees; and 63 per cent have less than 50 employees. There are 300 major companies accounting for over 50 per cent of industry production. Of this number, 80 per cent are foreign-owned. Among the smaller companies, Canadian ownership is more prevalent.

Trade and Protectionism

Table 1 demonstrates the huge volume of trade in machinery and equipment between Canada and the United States. Approximately 70 per cent of total Canadian exports in the sector went to the United States in 1983. Although the overall sector had a huge trade deficit of close to \$3 billion dollars in 1983, the amount of the deficit decreased by almost \$2 billion from 1978 to 1983. One of the most noticeable decreases in the deficit was in the materials handling machinery sub-sector. In 1978, the trade deficit for this sector was \$204 million; in 1983, it was \$3 million, a decrease of \$201 million. This decrease resulted largely from the decrease in Canadian imports from 1978 to 1983, from just over \$500 million in 1978 to \$330 million in 1983.

The majority of the overall trade deficit in the machinery and equipment sector can be accounted for by the heavy equipment sub-sector. In this sub-sector, general purpose machinery had a trade deficit of \$616 million in 1983 while special industry machinery ran a

Table 1

Canadian Trade with the United States, 1978 and 1983:
Machinery and Equipment Sector*
(\$ Canadian thousands)

Sub-sector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Heavy Machinery Sub-sector Total	1,518,049	2,398,182	2,120,360	3,530,775	5,577,844	4,188,278	(3,179,662)	(2,067,918)
General Purpose Machinery	209,183	330,463	348,464	704,650	1,113,191	964,918	(782,728)	(616,454)
Materials Handling Machinery	203,633	321,695	326,628	333,086	526,202	330,088	(204,507)	(3,460)
Special Industry Machinery	678,215	1,071,430	1,065,991	1,921,305	3,035,237	2,303,594	(1,963,807)	(1,237,603)
Agricultural Machinery and Equipment	427,018	674,594	379,277	571,734	903,213	589,678	(228,619)	(210,401)
Other Machinery and Equipment	207,250	327,409	350,767	1,027,733	1,623,591	1,102,867	(1,296,182)	(752,100)
Total Machinery and Equipment	1,725,298	2,725,589	2,471,127	4,558,509	7,201,434	5,291,145	(4,475,845)	(2,820,018)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

* The figures in this table and in Table 3 do not always correspond to statistics for the machinery and equipment sector published by the Department of Regional and Industrial Expansion. For example, while our figures show the sector total for Canadian imports in 1983 to be \$5 billion, current figures collected by DRIF had imports for the sector totalled at \$10 billion. The discrepancy in the figures can be accounted for by the fact that DRIF includes

Table 1 (cont'd)

items in its statistics which are not necessarily machinery and equipment as such. For example, its trade figures include certain miscellaneous metal products. In our case, many of these products are included in the metals and minerals sector. Because these products are often traded as part of a larger machinery and equipment item, they are difficult to separate out. As a result, they do not necessarily belong to the machinery and equipment sector nor do they reflect the industry's exact statistics. The data, however, has been collected this way for some time.

Other examples of items which we did not include in our statistics are instruments and related products (these were put either in the scientific and medical sector or in the miscellaneous sector); commercial refrigeration and air-conditioning equipment were placed in the electrical machinery and equipment sector; plumbing equipment and household, power, and hand-operated tools were put in "other end products" in the miscellaneous sector; and service industry equipment was either included in this sector or in the electrical machinery and equipment and miscellaneous sectors.

1. Current dollars.
2. Constant dollars expressed in 1983 values. Refer to Table 3 in "Overview" for calculations of constant dollars.

deficit of over \$1 billion. The decrease in the deficit from 1978 for both sub-sectors can be partially accounted for by the decrease in imports. Exports remained virtually unchanged during the same period. The \$1 billion decrease in the overall trade balance from 1978 to 1983 can also be explained by the decrease in Canadian imports in the total heavy machinery sub-sector. The impact of the recession on the level of imports and exports also cannot be underestimated.

Table 2 reviews the levels of Canadian tariffs on a sub-sector by sub-sector basis. As one would expect, the level of tariffs have decreased from 1978 to 1983 due to the Tokyo Round negotiations - but they still remain relatively high, ranging from 11.9 per cent for industry machinery to 12.9 per cent for other machinery and equipment. The average tariff for the machinery and equipment sector will be reduced to 9.2 per cent in 1987 from the pre-Tokyo Round level of 15 per cent. Furthermore, in both the heavy machinery and other machinery and equipment sub-sectors, more than half of the imports entered Canada duty-free. This reflects the fact that Canada tends not to apply duties to machinery products that are not made in Canada.

Overall, the heavy machinery sub-sector yielded duty of \$160 million at an average tariff level of 12.1 per cent in 1983. This represents a substantial decrease from the duty collected in 1978. One possible explanation for the lower duty collected is the effect of the tariff reductions agreed to at the Tokyo Round of the GATT. Another possible reason for the decrease is the effect which the Machinery Program has had on the machinery and equipment sector. The Machinery

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Machinery and Equipment Sector
(\$ Canadian thousands)

	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4) ÷ (3) Tariff (%)*	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
SUB-SECTOR										
Heavy Machinery Sub-sector Total	3,530,775	4,188,278	2,114,743	2,866,801	1,416,033	1,321,477	200,367	160,095	14.2	12.1
General Purpose Machinery	704,650	964,918	338,798	520,578	365,853	444,340	53,487	55,324	14.6	12.5
Materials Handling Machinery	333,086	330,088	115,966	158,621	217,120	171,467	29,611	20,529	13.6	12.0
Special Industry Machinery	1,921,305	2,303,594	1,099,880	1,614,223	821,425	689,371	115,518	82,286	14.1	11.9
Agricultural Machinery and Equipment	571,734	589,678	560,099	573,379	11,635	16,299	1,751	1,956	15.1	12.0
Other Machinery and Equipment	1,027,733	1,102,867	837,457	872,887	189,275	229,979	30,904	29,624	16.3	12.9
Total Machinery and Equipment	4,558,509	5,291,145	2,952,201	3,739,688	1,606,309	1,551,457	231,271	189,720	14.4	12.2

Statistics Canada, External Trade Division, 1984.

* To the degree that duty remission and the Machinery Program erode tariff protection, our figures might be an overstatement of the actual tariff rate.

Program provides that the duty on certain items be remitted if such goods are not available from production in Canada. Items eligible for remission of duty include most machinery imported into Canada such as construction and materials handling equipment, certain special industry machinery, and logging machinery (see Appendix 1).

Table 3 comparatively lists Canadian and American tariffs on a number of common machinery and equipment products. Although not all items can be compared due to discrepancies in item description, most are fairly compatible. The American definitions are more specific than the Canadian in that Canada tends to lump together a wide variety of items under a "basket category".* In many instances, one item is categorized under several tariff item numbers and it is often difficult to differentiate between products.

As illustrated in Table 3, there is a substantial difference between Canadian and American tariffs on a number of items. In all of the examples used, the American tariff is lower than the Canadian tariff. For elevators, the difference between the two tariffs is 7.9 per cent. While it can be argued that the amount of trade in elevators is not that high between the two countries, it can also be posited that there is not more trade because of the high Canadian tariff. It must be realized, however, that the portion of the elevator that falls under the machinery and equipment sector is less than half of

* "Basket item" 40711 (machinery, not elsewhere specified) covers between 80-90 per cent of machinery.

Table 3

Selected Products in the Machinery and
Equipment Sector: Canadian and United
States Tariffs, 1984

Product (American Description)	Canadian Tariff	American Tariff
Steam and other vapor generating boilers, and parts thereof	13.4%	6.5% ad. val.
Steam engines, and parts thereof	11.4%	4% ad. val.
Elevators	11.4%	3.1% ad. val.
Lawn Mowers, and parts thereof	11.4%	6.3% ad. val.
Steam turbines and parts thereof	15%	7.5% ad. val.

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No.21, (16th edition), 1983-84.

the total cost of the structure. The cost of local erection and fabrication of the elevator are not taken into account here.

Farm machinery is imported duty-free and with the exception of electrical machinery, most industrial machinery is covered under the duty remission scheme in the Machinery Program. In order to favour our resource industries, there are tariff items labelled "end-use" under which equipment is imported duty-free.

Although the tariff rate is substantial on a number of items, it is the non-tariff barriers that are of major concern to the machinery and equipment industry. MEMAC claims that the extent of American NTBs is considerable. Federally, there is the "Buy America" Act, for example. Authorities such as the Tennessee Valley Authority, the New York Port Authority, and others (which are important government sector or public procurement markets for Canadian products) have clauses in most tenders which give a distinct percentage preference to American contracts and products. There can be as much as a 15 per cent preference given to U.S. firms. Thus, the industry feels that any agreement for free trade with the U.S. would have to address the problem of NTBs and their implications for Canadian trade in the machinery and equipment sector.

In addition to NTBs, there are several other trade-related regulations which impact heavily upon the machinery and equipment sector. The Canadian government assists the industry through the Program for Export Market Development (PEMD). This incentive program is not limited to the machinery and equipment industry. On the U.S. side,

the Domestic International Sales Corporation (DISC) program can provide a very substantial export subsidy. When it is forcefully applied, DISC can be very significant. It permits American exporters to apply lower income tax rates to product destined for export. Because it constituted a cause for international concern during the Tokyo Round of GATT and became too expensive for the U.S. to maintain, the United States decided to dismantle DISC and replace it with the Financial Sales Corporation (FSC).^{*} Both DISC and FSC serve a similar purpose in the field of tax incentives.

Impact of Free Trade

Because the machinery and equipment sector production is so varied, it was difficult to obtain a reasonable level of consensus within the sector regarding the adviseability of a free trade agreement with the United States.^{**} In terms of Canadian production and economies of scale and market access to the U.S., there could be a mixture of positive and negative effects under a free trade agreement. The machinery and equipment sector is very ambivalent because of the high degree of American foreign ownership in the industry. MEMAC argues that the

^{*} FSC has not yet been implemented but is still under legislative review.

^{**} MEMAC completed its own survey on whether or not its members favoured an FTA with the U.S. The results of this survey are illustrated in Diagram I.

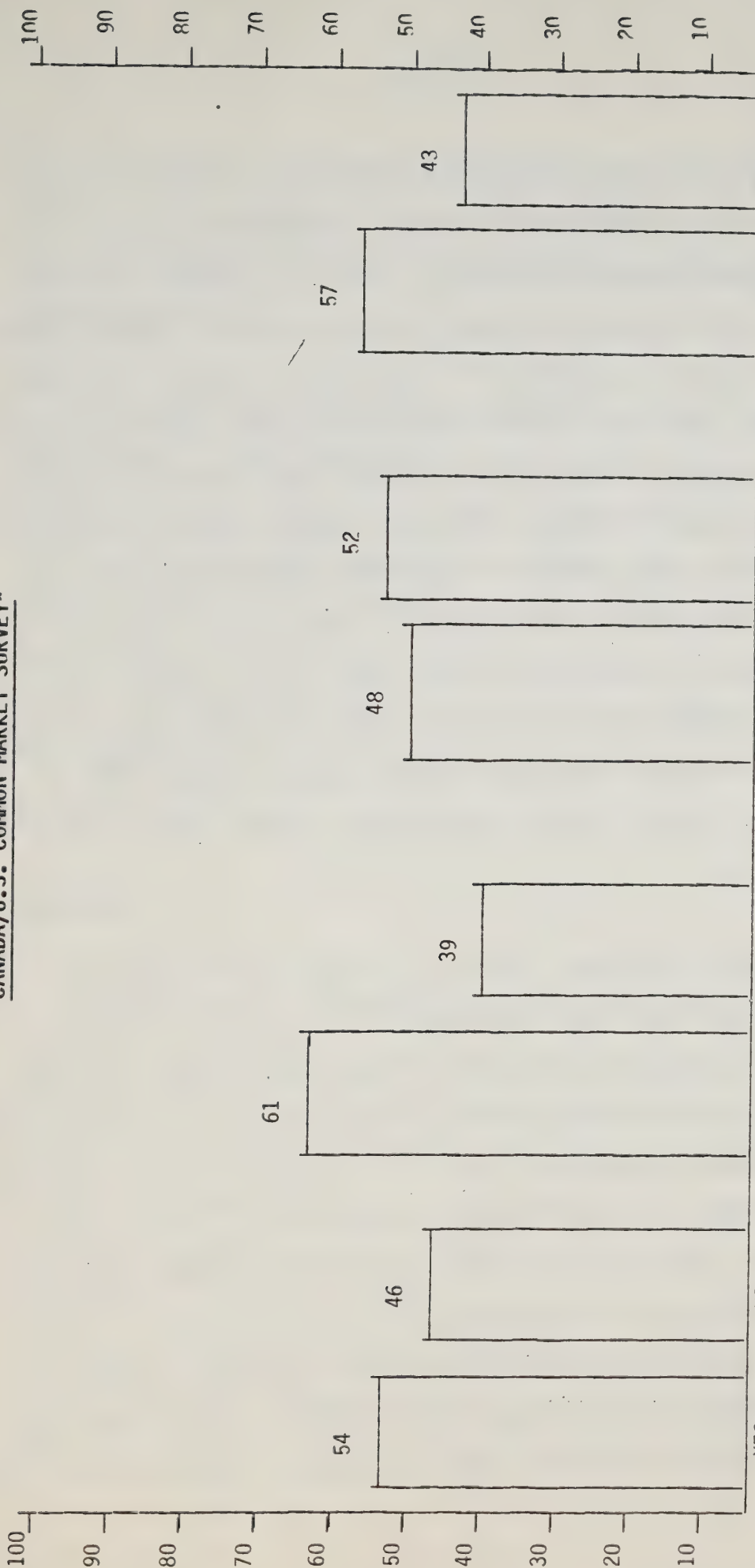
impact of a free trade agreement with the U.S. would vary immensely with corporate policy. Ingersoll-Rand, for example, has the prerogative of competing with its own corporate plants in the U.S. with its Canadian product. Another firm, on the other hand, could compete in the rest of the world but would be prohibited from competing against its American plants in the United States. The latter case, coupled with the advent of a common market, could result in the closure of the Canadian plants.

Economies of scale are not a major factor in the heavy and custom-made sectors of the Canadian machinery industry. They basically survive on individual orders. The mass production of standard products such as valves, pumps, and compressors, on the other hand, would be highly sensitive to an FTA. In 1983, however, industry figures estimated that standardized products constituted only 4.3 per cent of total Canadian machinery and equipment exports to the United States.

With regard to competition, the Canadian industry would generally be competitive in terms of engineering and delivery. It is on price that we might not be competitive. Price is determined, to a large extent, by four major factors - labour cost, currency exchange rate, materials costs, and tariffs. In some periods, Canadian labour is cheaper than American, while in others, the reverse is true. The current lower value of the Canadian dollar has a major impact on price but primarily on imports rather than exports; materials costs in the two countries are relatively comparable; and the tariff is a significant but not overwhelming factor. Competition, in turn, depends on the efficiency of the plant and its infrastructure. The industry estimates

Diagram I
MEMAC

CANADA/U.S. COMMON MARKET SURVEY*



* This survey also demonstrated that non-American foreign-owned firms were almost totally aligned with Canadian-owned firms in their responses. The reason for this is twofold. First of all, these firms do not have conflicts with an American parent and secondly, it is easier for them to access the huge American market via Canada.

that on average Canadian manufacturing plants are 25-30 per cent less efficient at this time than U.S. plants, largely due to greater modernization investment on the U.S. side. If a Canadian subsidiary plant is efficient and sufficiently competitive in its product, chances are that the American parent will leave the firm intact. If, on the other hand, the plant is inefficient and the product could be produced more effectively in the U.S., the Canadian subsidiary would be forced to close. In terms of American investment, parents would not necessarily favour Canada unless there is a substantial domestic demand for the product manufactured by the subsidiary. There are no significant attractions (i.e., home sales; cheap labour) in our industry vis-à-vis the U.S. which would cause an American parent to invest money in Canada instead of the U.S. There was a general consensus within MEMAC's membership that the long-term impact upon investment under an FTA would be negative.

Regarding employment, industry representatives felt that on balance, the labour force would decline. Under total free trade, corporate adjustments would have to be made with Canadian subsidiary plants working under capacity being closed down as U.S. parent companies relocated their operations to the U.S. The areas in which there is the greatest risk of job loss are those in which the U.S. is our chief competitor (i.e., mining equipment; oil and gas equipment, especially pumps and valves and wellhead equipment; and machine tools). Because the vast majority of machinery and equipment companies in Canada have American parents, unless product rationalization occurred, some firms would be forced to wind down their operations and function primarily as

servicing outlets. Some plants, on the other hand, would probably rationalize their products to a greater degree than at present. The route which companies eventually follow depends, to a large extent, on corporate policy.

It was noted in discussions with government officials that U.S. parents have also been suffering as a result of the recession and that if the U.S. plant is inefficient, it will close as well. The exchange rate is making Canada very competitive at present and as a result, the opposite of what is often expected could occur, namely, that the Canadian operation could remain open while the U.S. one closed. If a decline in employment did occur, the regional impact would be concentrated mostly in Ontario, where approximately 65% of the workforce is located.

Conclusion

While the impact of economic factors under an FTA would be substantial, there is also concern over the political implications of free trade. One view expressed by industry representatives is that politics and economics are intricately intertwined and that some degree of policy maneuverability would inevitably be lost. An example would be if restrictions were imposed on the Machinery Program which has benefitted the industry U.S. insistence under an FTA. Totally unlike the European Common Market which is often used for comparison purposes, the situation between Canada and the U.S. would not be an agreement between nine relatively similar economies but between two partners in

which one would be operating on an economic scale at least ten times that of the other. The attraction for Canada would be the huge American market and the benefits which an increasingly more open market would yield. The possibility that a certain amount of political sovereignty would be lost, while a concern, did not appear to be a major one for the industry.

Appendix 1

The Machinery Program, administered by the Department of Regional and Industrial Expansion, provides that the duty on certain items be remitted if such goods are not available from production in Canada. The Machinery Program came into effect around the same time as the Kennedy Round negotiations in 1968. Its main "objective is to increase efficiency throughout Canadian industry by enabling users to acquire advanced equipment not attainable from Canadian production at the lowest possible cost, yet affording Canadian manufacturers tariff protection on the machinery and equipment as soon as they are in a position to supply it. This is particularly significant for Canadian producers of custom engineered machinery" (Machinery Program, Department of Industry, Trade, and Commerce, 1978, p. 2).

The Machinery Program has also provided a forum whereby DRIE and machinery and equipment manufacturers can realize potential customers and identify the demand for machinery and equipment which might be economically manufactured in Canada. Through the Machinery Program, manufacturers have been given assistance to increase their range of products, expand production facilities, and improve international markets. Between its inception in 1968 until 1978, the Machinery Program saved machinery manufacturers more than \$1 billion.

Appendix 2

Machinery and Equipment Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
General Purpose Machinery	501-502, 50405-50437, 505-509	501-502, 50425-50428, 505-509
Materials Handling Machinery	511-519	511-519
Special Industry Machinery	521-52329, 52349-529	521-52329, 52349-529
Agricultural Machinery and Equipment	541-546, 50403	541-546
Other Machinery and Equipment	551,720,730	551,720,730

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983. Catalogue 65-203 and 65-202.

AUTOMOTIVE PRODUCTS

Description

The automotive products sector is arguably the most important manufacturing sector in the Canadian economy. Not only is it Canada's largest manufacturing sector, but it is integrally linked to Canadian foundry production, the rubber products industry, the textiles industry, the glass products industry, and the steel industry, to list some of its more important linkages. It is credited with leading the post-recession recovery of the last couple of years.

The automotive products sector is also structurally unique among Canadian manufacturing industries. As a consequence of the Automotive Products Trade Agreement (APTA), or auto pact, of 1965, the Canadian and U.S. industries have been effectively integrated for the past two decades. The auto pact has thus been used by some as an illustration of the potential benefits of free trade; however, it includes some important content and production safeguards to the Canadian industry which prevent it from constituting an example of full sectoral free trade. Nonetheless, the auto pact makes the automotive industry an important point of reference for the current discussions of sectoral and full free trade.

Our definition of the automotive products sector corresponds closely to that used by DRIE officials. DRIE sources listed four sub-sectors: motor vehicles, auto parts, specialty vehicles (eg. fire

trucks, mining trucks, ambulances and military vehicles) and tires and tubes. Using Statistics Canada data, we have split the DRIE motor vehicles sub-sector into two: autos and chassis, and commercial trucks and truck chassis. Also, we have included some items in the "other motor vehicles" category which would customarily be listed elsewhere - for example, golf carts and snowmobiles. Of the various sub-sectors, by far the two most important are the vehicle assembly group, and the engines, parts and accessories group. The latter grouping is customarily sub-divided into original equipment (OE) parts, and after-market (or replacement) parts.

Total employment in the sector has now reached 130,000, an increase in the previous high of approximately 125,000 reached in 1978. The recent upswing follows a period of decline, when the North American industry was embattled by increasing energy costs, increasing foreign competition, and outdated production methods and products. During this downswing, employment dropped to around 100,000. The current total is split equally in Canada between the vehicle assembly and the parts and accessories sub-sectors.

Firms in the vehicle assembly sub-sector are almost all American-owned. The sub-sector is dominated by the "big three" (GM, Ford and Chrysler), plus AMC, which is now 46 per cent owned by Renault. Given the intergration of the North American industry, it is not surprising that there are high levels of intra-corporate trade. The parts industry is much more diffuse. The Automotive Parts Manufacturers' Association of Canada (APMA) has 320 member-firms, the

majority of which are Canadian-owned. Most of the largest firms are American-owned, however, and there is a growing foreign (mainly Japanese) presence in the industry. An encouraging development is the recent improvement in the performance of Canadian-owned parts manufacturers. Less than four years ago, the parts industry was held up as an example of low productivity and outdated methods, and none of the nine largest independent parts manufacturers were Canadian. Today three of those nine are Canadian-owned, including the largest--Magna International. Overall, half of all parts production is in-house production by the large vehicle manufacturers, 20 per cent comes from large MNE's, and 30 per cent is produced by Canadian-owned firms. In tires, there are eight companies which are predominantly foreign-owned.

Under the auto pact of 1965, Canada and the U.S. eliminated duty on each others' new automotive products, with certain restrictions and safeguards. This agreement facilitated the rationalization of the industry on a continental basis, allowing (especially in Canada) the achievement of unprecedented economies of scale. The Canadian industry no longer produced an extensive range of automotive products, rather, its plants were converted to the production of a smaller number of products for the entire North American market. The result for Canada has been greatly increased levels of production, both in absolute terms and as a proportion of North American production; lower prices to consumers (now apparently below U.S. consumer price levels); and increased employment and wages. However, many feel these benefits could not have been secured without the safeguards which were attached to the agreement. In the U.S., duty-free status was accorded only those

products with 50 per cent North American content. In Canada, it was accorded only those producers that had production in Canada equal to 75 per cent of the value of their sales in this country, and that had met a required percentage of Canadian value added (CVA) in their Canadian production. Failure to meet these annual targets resulted in the application of Canadian tariffs to that producer's imports of parts for final assembly in Canada, and automobiles. In practice, only U.S.-owned manufacturers and Volvo (Sweden) took advantage of the pact; however, in theory, any firm could produce in Canada under the terms of the pact if it so wished. The terms of the APTA applied only to new vehicles, and thus to original equipment (OE) parts; aftermarket parts remained, and remain, subject to duty in both countries.

Some of the more conspicuous benefits of the auto pact have been cited above; the down side is that control of this most important of manufacturing industries was largely surrendered to interests south of the border. The major vehicle manufacturers, though American-owned, had maintained relatively autonomous management structures in Canada prior to the agreement. After the pact, however, all investment decisions were made in Detroit; thus, Canada has ended up with a disproportionate amount of the more labour-intensive production processes (in fairness, Canada wanted more labour-intensive activity in 1965 to increase employment). R&D was centralized, not surprisingly, in the United States. In this general context, some sources argue that without the safeguards, U.S.-owned firms would have gradually shifted all their important manufacturing processes south of the border, leaving Canadian manufacturing severely and permanently weakened. The APMA, for example,

asserts that with most of the Canadian content requirements met through in-house production, the big three went to American parts firms for virtually all their remaining requirements, causing much of the Canadian parts industry's weakness over the last two decades.

Other sources argue that the safeguards, like many rules, encouraged minimalist behaviour on the part of the major vehicle producers, encouraging them to meet their quotas but to avoid the effort required to establish an "integrated or dynamic industry in Canada."¹ These sources argue that despite the undeniable benefits of the pact, its safeguards locked Canada into a state of permanent dependence in the North American automotive industry, stuck without R&D and with more unskilled jobs, and unable to renegotiate without reopening issues which might jeopardize the whole agreement. This debate captures some of the classic issues and arguments which rage in economics between those who favour a more activist, interventionist role for government in the economy, and those who favour the primacy of an unhindered market. Unfortunately, the pact has hardly resolved these issues.

Recently, changing conditions in the industry internationally have led to a revival of this debate. Roughly stated, the industry is being internationalized. All major manufacturers are seeking markets throughout the industrialized and industrializing world. Increasingly,

¹ See Gilbert R. Winham, "The Canadian Automobile Industry and Trade-Related Performance Requirements," in the Journal of World Trade Law, Vol. 18, No. 6, Nov./Dec. '84, p. 486.

major firms are collaborating on development projects regardless of their national origin, and are purchasing parts from wherever they are cheapest, regardless of location. All markets are being increasingly penetrated by imports. Nowhere has this trend been more acutely felt than in North America, where the competition from cheaper and higher quality imports forced a major effort to modernize design and production in recent years, and where encroaching import penetration continues to spark debate. Many, including the Motor Vehicle Manufacturers' Association (Canada) and the APMA, support a recent federal task force recommendation that auto pact-type terms be extended to all producers with sales in Canada, regardless of national origin, on a compulsory basis. Others feel such an intervention in the flow of international trade would be disastrous.

The industry in Canada is located almost entirely in Ontario and Quebec, with over 80 per cent of employment in southern Ontario. Labour is highly unionized, and is well paid both by Canadian manufacturing industry standards, and by international standards in the automotive industry. A well-publicized chink in the unified North American industry recently developed when the Canadian branch of the UAW broke away from its international parent. The consequences of this development are as yet uncertain but could prove to be interesting.

Trade and Protectionism

Table 1 illustrates the volume and direction of Canada-U.S. trade in the automotive products sector. Most noteworthy is the sheer volume

of trade: in 1983, Canada exported over \$21 billion in this sector, and imported over \$17 billion. This represented nearly a \$3 billion growth in exports since 1978, and just over \$2 billion decline in imports. The strength of the industry in Canada is greatest in the trade of autos and chassis, and trucks and chassis. In the former, Canada had a \$4.6 billion surplus in 1983, while in the latter, the surplus was \$3.2 billion. Such impressive trade statistics would simply not be possible without the unhindered access to the U.S. market, and hence specialization, which the APTA affords.

In engines, parts and accessories, Canada continues to run a substantial deficit of \$3.6 billion. However, this is a marginal absolute decrease from the 1978 figure of \$5.5 billion. The fact that this deficit decreased substantially, while the vehicle assembly surplus increase substantially, accounts for the turnaround of Canada's overall trade position in the sector from a deficit of \$768 million in 1978 to a surplus of \$4.4 billion in 1983. However, Canada's current surplus is not likely to last, since it is based largely on the unexpected popularity of large vehicles which is in turn due primarily to the weakness of world fuel prices.

In tires and tubes, Canada's trade surplus with the U.S. increased from \$74 million in 1978 to \$282 million in 1983. Given the fact that DRIE sources suggest the Canadian tire industry is characterized for the most part by small, out-of-date and inefficient plants, Canada's growing surplus is somewhat surprising; tire manufacturers benefit from the inclusion of tires on completed vehicles under the auto pact.

Table 1
Canadian Trade with the United States, 1978 and 1983:
Automotive Products Sector
(\$ Canadian thousands)

Sub-Sector	Canadian Exports		Canadian Imports		Trade Balance	
	1978 ¹	1978 ²	1978 ¹	1978 ²	1978 ²	1983
Autos & Chassis	4,626,182	7,308,344	3,038,243	4,799,752	2,508,592	4,597,607
Trucks & Chassis Commercial	2,560,617	4,045,209	1,160,957	1,834,055	2,211,154	3,183,095
Other Motor Vehicles	92,372	145,927	150,390	237,583	(91,656)	(70,576)
Road Vehicle Engines & Parts, & Access.	4,278,696	6,759,393	7,741,103	12,229,231	(5,469,838)	(3,640,086)
Tires & Tubes	189,535	299,423	142,651	225,357	74,069	282,002
Total Automotive Products	11,747,401	18,558,295	12,233,344	19,325,978	(767,790)	4,352,041

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars.
2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant

Table 2 shows average tariffs in the various sub-sectors of the Canadian automotive industry. It also clearly demonstrates the impact of the auto pact on trade restrictions: for example, while average tariffs on the dutiable value autos and chassis in 1983 were 12.1 per cent, only 2.3 per cent of imports were in fact dutiable. This same pattern applies to trucks and truck chassis. In parts and accessories, the percentage of dutiable trade is only slightly higher, 4.4 per cent. This is surprising in light of the fact that all aftermarket part sales are dutiable, but probably accounted for by the fact that after-market parts are protected by a prohibitive tariff which discourages large volumes of U.S. imports. In tires, the vast majority of imports are subject to substantial tariffs, which averaged over 14 per cent in 1983.

In general, tariff rates have decreased in amounts ranging from just over 1 per cent in the case of parts to 3.3 per cent in the case of tires. Vehicle tariffs now stand at 12.1 per cent. While this is still a substantial level of protection, the tariff will continue to drop to a level of 9.2 per cent by 1987, in keeping with Tokyo Round commitments. If further cuts are negotiated in a new MTN round, an interesting question will arise regarding the long-term fate of the APTA as the incentive for U.S. producers to build their cars in Canada is mainly avoidance of the Canadian tariff. If tariffs drop to insignificant levels, one wonders if U.S. firms might not start to disinvest.

Table 3 lists some Canadian and U.S. tariff rates on comparable items. Obviously, the table is misleading, because most automotive

Table 2
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Automotive Products Sector
(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4)÷(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Autos & Chassis	3,038,243	4,886,538	3,035,419	4,773,708	2,823	112,830	411	13,666	14.6	12.1
Trucks & Chassis Commercial	1,160,957	965,730	1,149,668	954,370	11,289	11,359	1,671	1,376	14.8	12.1
Other Motor Vehicles	150,390	150,378	75,647	52,786	74,743	97,592	10,099	10,644	13.5	10.9
Road Vehicle Engines & Parts, & Access.	7,741,103	10,913,052	7,344,340	10,434,488	396,763	478,564	54,206	60,236	13.7	12.6
Tires & Tubes	142,651	245,203	15,487	24,829	127,164	220,374	22,201	31,214	17.5	14.2
Sector Total	12,233,344	17,160,901	11,620,561	16,240,182	612,783	920,719	88,588	117,136	14.5	12.7

trade is with the U.S., and most of this trade is duty-free. However, the table demonstrates that where tariffs apply, as they do for example on after-market parts and on tires, Canadian protection is in general substantially greater than American protection. It should also be remembered that most of these tariffs are declining, as negotiated during the Tokyo MTN Round.

Obviously, the safeguards in the auto pact constitute a significant non-tariff barrier on the Canadian side. According to the terms of the agreement, qualifying manufacturers were required to: maintain for each class of vehicle produced (e.g., autos, trucks, etc.) their 1964 production-to-sales ratio in Canada or a production-to-sales ratio of 75 per cent, whichever was higher; and to maintain in each class of vehicles "Canadian value added" (CVA) at least equal to the absolute value attained in 1964. In addition, the Canadian vehicle manufacturers submitted "letters of undertaking" to the Canadian government in which they agreed to: first, increase CVA each model year by 60 per cent of the value of the growth in Canadian car sales, and by 50 per cent of the value of the growth in commercial vehicle sales; and second, collectively increase CVA in the production of vehicles and OEM parts in Canada by \$260 million over the 1964 CVA level, by a deadline of July 1968 (this latter undertaking was easily met and surpassed). The U.S., for its part, gave duty-free status under the APTA to vehicles containing 50 per cent North American content. Because of its discriminatory nature, the Americans had to obtain a GATT waiver for this provision.

Table 3
Selected Products in the Automotive Products Sector:
Canadian and United States Tariffs, 1984

Product	Canadian Tariff	American Tariff
Automotive Trucks	11.4% (free under APTA)	8.5% (free if Cdn.)
Fire Engines	12.9%	6.5%
Concrete Mixers	11.4%	4.2%
Starter Motors	11.4% (free under APTA)	3.2% (free for Cda.)
Compression-Ignition Engines	11.4% (free under APTA)	4.2%
Fuel injection pumps for compression- ignition engines	11.4% (free under APTA)	2.7% (free for Cda.)
Hose, pipe and tubing for conducting gases or liquids	14.6% (free under APTA)	3.4% (free for Cdn. autos)
Tire Tubes	12.9%	4.2%

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84.

More recently, both Canada and the United States have negotiated import ceilings with the Japanese. This fact demonstrates that the North American industry is effectively integrated, and thus faces the same international challenges. At present, the most serious trade issues in the automotive sector relate to the growing strength and market penetration of offshore manufacturers.

Both Canada and the U.S. apply increasingly substantial safety and emission standards, which are often viewed as NTB's. Given the importance of the sector to manufacturing industry and employment in both Canada and the U.S., governments in both countries have not hesitated to intervene to assist the sector when they have perceived the need to do so. The best-known example of government intervention was the bailout of Chrysler. In Canada, government assistance recently facilitated the construction of a large new plant by AMC-Renault in Brampton. Thus, while one is unlikely to identify many ongoing industrial assistance programmes in the sector, it is not at all unusual to see government intervention where policy-makers perceive a need or an opportunity.

Impact of Free Trade

The likelihood of negotiating absolute free trade in the core part of the automotive sector (i.e. that segment covered under the APTA) is not great according to industry sources. The industry has rationalized on the basis of a set of quotas and safeguards which, if removed, could lead to a serious decline in the Canadian industry, or at least to a

measure of uncertainty which policy makers would likely find unacceptable. Certainly, Canadian officials have resisted all previous attempts by American officials to have the safeguards removed. It is impossible to speculate on how the industry would have evolved without safeguards: as it is, the industry has matured with management, R&D, and other "brain" functions based mainly in the U.S., and with the Canadian industry based primarily on the more labour-intensive production processes. If safeguards were removed now, the Canadian industry fears that it would be easy and logical in management eyes to shift a good portion of Canadian production to U.S. facilities. While some sources feel that there are Canadian cost advantages, notably in wages, which make this unlikely, the example of the persistently increasing deficit in after-market parts, cited in the 1978 Reisman Report, indicates that Canada is relatively uncompetitive and lacking in comparative advantage in automotive production. Specifically, it was noted in the Report that in spite of substantial tariff protection, the Canadian deficit with the U.S. in after-market parts had increased steadily since the inception of the auto pact, indicating that Canadian producers had become increasingly unproductive - and, by extension, that Canada lacked a comparative advantage in the production of automotive products. In sum, although there is talk periodically of renegotiating the auto pact, the removal of all safeguards would probably not be acceptable to the Canadian industry.

In the tire sub-sector, as mentioned previously, most Canadian plants are small, out-of-date, and inefficient--and are, furthermore, largely foreign (especially American) owned. Given the relatively huge

scale economies available to American producers, it seems probable that the Canadian industry would have a difficult time without protection, and might experience widespread disinvestment.

The only other area where free trade would impact on the sector is on after-market parts, where Canada currently maintains an average tariff rate of around 11.4 per cent. While after-market part sales represent only 10 per cent of the sales of the Canadian parts industry, one would expect the removal of tariffs would have a fairly minimal impact on the sector. Nevertheless, the Canadian industry does not want to see the removal of protection. Profit margins are reported to be relatively high on the sale of after-market parts, so that they probably constitute an important buffer to the Canadian parts industry. However, given its recent improvements in productivity and sales, the industry might be able to adapt successfully to a free North American market for replacement parts.

The most significant trade related issue facing the sector at present is the question of how to respond to the challenge by offshore producers to the Canadian section of the North American industry, and how such a response would affect the auto pact. As mentioned previously, both Canada and the U.S. have negotiated voluntary import restrictions on Japanese cars. However, the current Canadian and U.S. agreements end in April of this year. A federal task force in 1983, co-chaired by Bob White of the UAW and Pat Lavelle of the APMA, recommended that offshore producers be required to comply with the same terms as producers under the auto pact - ie. to produce the same value

of automobiles in Canada as they sell here, and to include a fixed percentage of Canadian value added in their Canadian production. It was hoped that such a policy would bring similar benefits to Canada from offshore producers as those achieved under the APTA from North American producers, and perhaps some new ones such as increased employment, increased business for Canadian parts producers, increased manufacturing production in Canada, etc.

The task force's recommendations have not been implemented, though they have been thoroughly debated, and were recently endorsed by the Motor Vehicle Manufacturer's Association in its brief to the Commission. Among the major concerns raised against the idea are that content rules create costs to the consumer and inefficiencies in production which run counter to the growing internationalization of the industry. Furthermore, such a plan would aid the proponents of various content regulations in the U.S. which would be harmful to Canadian interests and would give offshore producers duty free access to the American market via Canada - a situation which the U.S. would certainly find objectionable and which might jeopardize the APTA. Thus, Canadian and American automotive interests are already inextricably linked: the real question is how the North American industry will respond to the challenge of internationalization and what capacity Canada has for autonomous policy initiatives without jeopardizing the auto pact.

Conclusion

The automotive products sector has a unique role to play in the current debate over free trade, because to a limited extent, it already exemplifies it. The rationalization of the Canadian and American industries was achieved through the 1965 Automotive Products Trade Agreement (APTA). Most authorities, both within and outside the industry, would agree that the pact has generally benefitted both Canada and the U.S. In Canada, it can be credited with increasing industry productivity, production, employment, trade, and with lowering consumer prices on automobiles. Thus, most firms in the sector would endorse this limited experience with liberalized trade.

However, the auto pact does not represent complete free trade in this sector. It includes certain quotas and safeguards which, in Canada, ensure the value of vehicle production equals 75 per cent of the value of Canadian sales, and that Canadian value added remains at least at its 1964 level. There have been drawbacks to the auto pact: loss of management and R&D functions in Canada, and the concentration of labour-intensive production processes in Canada. Whether safeguards prevented the negative effects from being much worse, or whether they encouraged a harmful minimalist approach on the part of the major automotive firms is unclear. In any case, the auto pact has led to the development of an industrial structure in this sector which very likely makes the negotiation of full free trade, and the resultant loss of safeguards, unacceptable to the Canadian industry.

Where significant tariffs still remain - in tires and on after-market parts - the industries in question oppose free trade. While parts manufacturers have made significant gains in efficiency and profitability recently, and could be expected to weather the limited adjustments involved in moving to full free trade, the tire sub-sector has significant problems and might generally fare poorly under full free trade.

As mentioned previously, an interesting chink in the integration of the North American industry developed recently when the Canadian branch of the UAW pulled out of the international union. It remains to be seen whether this move will lead to significant differentiation between labour in the two countries, and whether it will alter corporate perceptions of Canadian labour.

Finally, it should be noted that the major competitive challenge to the industry in both Canada and the U.S. now comes from large offshore producers. How North American policy makers and the industry deal with this challenge will have a crucial effect on the future prosperity of this most important of manufacturing industries, and perhaps on the future of the APTA.

Appendix

Automotive Products
Sector Definition by Canadian International Trade
Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Autos and Chassis	581	581
Trucks and Chassis Commercial	583	583
Other Motor Vehicles	58730-58799	58742-58799
Road Vehicle Engines, Parts and Accessories	50401,588-589	50401,588-589
Tires and Tubes	621,625	621,625

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

URBAN TRANSIT

The Canadian urban transit sector is extremely difficult to define. This is especially so in the statistical sense, and consequently, we were unable to arrive at a satisfactory definition with Statistics Canada information. The basic problem is that the urban transit sector refers less to an industrial categorization than to a marketing categorization: most firms which produce urban transit vehicles and products do so as one element of a much broader product line, and will shift labour and production resources in and out of urban transit items according to demand. This is necessary because equipment is generally sold on the basis of large, infrequent and expensive orders, making for a "lumpy" market and wide variations in annual levels of sales and production.

Fortunately, the urban transit sector was the subject of a 1984 feasibility study on the possibility of free trade, written by Ben Lal of the Department of Finance. We will rely heavily on the statistics and information accumulated for that study in our discussion.

The sector includes a diverse range of products, from complete vehicles to vehicle control and communication systems, to fare control, traction power and track systems, through passenger distribution and maintenance systems. The feasibility study was able to identify four basic sub-sectors: rail car manufacturers, bus manufacturers, suppliers direct to operators (eg. Toronto Transit Commission), and suppliers to vehicle manufacturers. In terms of companies, the sector breaks down as

follows: five major transit vehicle firms (the "driving force" in the sector), 25 significant manufacturers of components and materials, a number of consulting and engineering firms, and about 200 firms occasionally or peripherally involved in urban transit, for a total number of associated firms of just under 250.

In the urban rail sub-sector, a variety of firms must collaborate on bids for new orders, because contracts are for entire rapid transit systems. Many of the components which go into both urban rail vehicles and buses are made in the U.S., so even vehicles built for the Canadian market will have close to 50 per cent foreign (ie. American) content. However, among the vehicle manufacturers, Canadian ownership is high: 4 out of 5 major vehicle manufacturing firms are Canadian-owned, and two are provincially-owned. This is not the case among component manufacturers, where foreign-owned companies predominate.

The growth of the industry in Canada has been dramatic. According to Lal ("Feasibility Study", 1984), sales for the period 1971-1977 totalled \$316 million with almost no exports, while sales for 1978-1982 were over \$1.3 billion of which approximately 40 per cent represented export sales. The U.S. market was essential to Canadian producers: it was the source for 95 per cent of this country's exports.

In the wake of the rapid expansion of the 1970's, the industry possesses a substantial overcapacity in the 1980's. The bus sub-sector, for example, produced an average of 1,050 units annually from 1976 to 1982, while its capacity was 1,500 units (Lal, p.7). In light of

declining sales prospects in the 1980's, industry and government sources predict a limited "shakeout" of firms in the sector over the next few years, with or without free trade.

DRIE literature estimates total employment in the sector at 7,000 although this total is difficult to establish because of its variability and the fact that it will often represent only a portion of the employment within a multi-faceted firm. It breaks down regionally as follows: Ontario-44 per cent; Quebec-36 per cent, Manitoba-10 per cent; other western provinces-10 per cent.

Trade and Protectionism

As previously mentioned, Statistics Canada information is inadequate for the purpose of describing the urban transit industry. This is demonstrated by Tables 1 and 2. Table 1 attempts to show vehicle exports and imports; however statistics cannot be broken out for exports of urban rail vehicles. Furthermore, the bus statistics include sales of school buses and inter-city buses. The statistics do not include trade in the many urban transit components produced in Canada, which are subsumed within other sectors - notably electronics. Furthermore, annual statistics are misleading because of the "lumpiness" of urban transit sales. However, Table 1 does demonstrate the huge increase in trade between 1978 and 1983, reflecting the trend from 1971 onwards.

Table 1*

Canadian Trade with the United States, 1978 and 1983:
Urban Transit Sector
(\$ Canadian Thousands)

Sub-sector	Canadian Exports		Canadian Imports		Trade Balance	
	1978 ¹	1983	1978 ¹	1983	1978 ²	1983
Vehicle Systems - Buses & Chassis	23,236	125,486	41,305	64,197	(4,597)	61,289
Self-propelled Rapid transit and railway cars	-	-	404	1,795	-	(1,795)
Total Urban Transit Sector	23,236	125,486	41,708	65,992	(5,000)	59,494

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars.
2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

*Note: This table does not accurately describe industry trade, because of the inability to aggregate statistics for products which are contained within other sectors, and because Statistics Canada confidentiality rules prevent the release of figures in some categories.

The tariff figures arrived at in Table 2 for buses are considerably higher than the tariff rates listed in Table 5, again confirming the inaccuracy of our data. However, the figure for urban rail vehicles in Table 2 is a fairly close match of the rates in Table 5. Both tables show that Canada imposes substantial duties on foreign imports.

Table 3 illustrates the rapid increase in both export sales and overall sales which has characterized the Canadian industry since 1971. It also demonstrates the lumpiness of sales. Although there has been a general increase in sales over the entire period in question, this same pattern has not been consistent on an annual basis. In fact, domestic and overall sales decreased each year between 1977 and 1981, before rebounding dramatically in 1982.

Table 4 illustrates the current position of the industry, by tallying up major upcoming sales. The table illustrates that the industry will experience continued growth over the short term, although longer term prospects are not so promising. It also demonstrates graphically the importance of the American market to Canadian producers: not only do current American orders constitute 95 per cent of upcoming export sales, but they are almost 2.5 times as valuable as upcoming domestic orders. Thus, the importance of continued access to the American market cannot be overemphasized.

Table 5 show that Canadian tariffs are, on the whole, significantly higher than American tariffs. However, there is a consensus within the industry that tariffs are less significant barriers to trade than NTBs.

Not surprisingly, the industry has few objections to the maintenance of the current tariff structure. As noted in the table, buses produced by eligible firms can be imported duty free by either country under the terms of the Auto Pact, although the Canadian content requirements in the pact effectively limit bus sales in Canada to Canadian plants, since American buses which do not meet the safeguards are subject to the 9.2 per cent duty. It is only recently that Canadian bus manufacturers have been subjected to similar content requirements as a consequence of the Buy America provisions of the federal Surface Transportation Assistance Act (STAA). Given the relative size of the U.S. market and the fact that much of their content was already American, Canadian manufacturers have readily adapted to the new requirements.

As suggested previously, the industry in Canada is far more concerned with non-tariff barriers than with tariffs. These are substantial in both Canada and the United States. In the U.S., the major NTBs are the Buy America provisions of the STAA. The STAA is the major source of funding for new urban transit projects throughout the U.S.. The current Buy America provisions attached to it allow the purchase of foreign products only if the purchase of domestic products would raise the overall contract cost by more than 10 per cent. Alternatively, a foreign company may qualify as a domestic bidder if final assembly takes place in the U.S., and if more than 50 per cent of the value of components is produced in the U.S. Furthermore, state governments are expressly granted the right to impose additional Buy American requirements where they see fit. States may also adopt state procurement practices, although they have not done so thus far.

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Urban Transit Sector
(\$ Canadian thousands)

Sub-sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4)÷(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Vehicle Systems - Buses & Chassis	26,146	64,197	24,271	62,893	1,875	1,304	284	159	15.1	12.2
Self-propelled Rapid transit and railway cars	256	1,795	-	1,741	256	54	51	7	20.0	12.8
Total Urban Transit Sector	26,401	65,992	24,271	64,634	2,131	1,358	335	166	15.7	12.2

Statistics Canada, External Trade Division, 1984.

Table 3

Sales of Canadian Urban Transit Equipment

(\$ Canadian Millions)

<u>Year</u>	<u>Domestic</u>	<u>Export</u>	<u>Total</u>
1971 to			
1977	296	20	316
1978	193	92	285
1979	155	119	274
1980	131	70	201
1981	100	82	182
1982	228	189	417
TOTAL	807	552	1,359

Source: Lal, Department of Finance, "Draft Report on the Feasibility of Freer Trade with the U.S. in Urban Transit Equipment", April 1984).

Table 4

Major Current Orders - Urban Transit

(\$ Canadian Millions)

<u>April 1983 Summary</u>	<u>Delivery Date</u>	<u>Contract Value</u>	<u>Canadien Content</u>	<u>%</u>
U.S. Urban RAIL	1984 to 1987	1,672	886	53
U.S. Urban BUS	1983 to 1984	<u>94</u>	<u>45</u>	<u>47</u>
TOTAL U.S		<u>1,766</u>	<u>931</u>	<u>52</u>
Canada Urban RAIL	1983 to 1985	560	533	95
Canada Urban BUS	1983 to 1985	<u>181</u>	<u>103</u>	<u>56</u>
TOTAL CANADA		<u>741</u>	<u>636</u>	<u>85</u>
TOTAL U.S.		1,766	931	52
TOTAL CANADA		741	636	85
OTHER FOREIGN		<u>100</u>	<u>95</u>	<u>95</u>
TOTAL CURRENT ORDERS		<u>2,607</u>	<u>1,662</u>	<u>64</u>

Source: Lal, Department of Finance, "Draft Report on the Feasibility of Freer Trade with the U.S. in Urban Transit Equipment", April 1984.

Table 5

**Selected Products in the Urban Transit Sector:
Canadian and U.S. Tariffs, 1984 (Final MTN)**

Product	Canadian Tariff	American Tariff
A. Buses* (Complete units-diesel and trackless trolley)	9.2%	3.1%
Parts of Buses*		
Chassis	9.2%	4.0%
Body	9.2%	4.0%
Motors - internal combustion	8.0%	3.7%
- electric (20-200 HP)	9.2%	free
Transmission*	8.0%	3.1%
Seats*	9.2%	3.1%
Air-conditioning equipment*	9.2%	2.2%
B. Railcars, Self-propelled, passenger, non-diesel powered	12.5%	6.3%
Parts of railcars, self-propelled, passenger (non-diesel powered)		
- electrical apparatus	12.5%	5.3%
- axles and axle bars	15.0%	0.5%
- wheels	12.5%	free
- others parts (incl. chassis, shells, etc.)	12.5%	3.9%
C. Rolling stock, non-self propelled, passenger	17.5%	18.0%
Parts for above (except wheels)	17.5%	5.5%
- wheels	15.0%	free
D. Locomotives	15%	3.9%
Major parts - diesel motors	9.2%	3.7%
- electric motors - 20-200 HP	9.2%	free
over 100 HP	9.2%	4.2%
- chassis, tops and bodies	15.0%	3.9%
E. Ancillary equipment		
- signalling apparatus	free	2.7%
- communications apparatus	9.2%	4.2%

Source: Lal, Department of Finance, "Draft Report on the Feasibility of Freer Trade with the U.S. in Urban Transit Equipment", April 1984.

Canadian-made component manufacturers have been effectively excluded from the American market unless they have production facilities in the U.S., by virtue of the fact that they must underbid American products by 25 per cent, as provided by Buy America legislation. Alternatively, they may still enter the U.S. in the non-American portion of Canadian vehicles.

In the last session of the American Congress, a Congressional bill to increase the American-content requirement for domestic bidders to 85 per cent was defeated. However, given increasing protectionist sentiment in the U.S., some Canadian government experts on the urban transit sector fear a re-introduction of this or an increasingly restrictive measure which, if adopted, would be disastrous for the Canadian industry. This is a major concern for the proponents of trade liberalization with the U.S. in the urban transit sector.

The major NTBs in Canada are provincial, since urban transit is strictly speaking a provincial responsibility. All provinces have preferences for local or Canadian production in their government purchases. Quebec, for example, has a 45 per cent Quebec content requirement. Ontario gives a 10 per cent preference to its own companies. Flyer of Manitoba is effectively shut out of Quebec; hence, GM (with its plant in Quebec) need not bid in Manitoba. Often, provincial governments will procure from in-province producers on a non-competitive basis, shunning lower bids from out-of-province producers.

These provincial policies have fragmented the Canadian market, and have inhibited the capacity of Canadian companies to collaborate to bid on large foreign projects. They have also led in some cases to undue competition between Canadian companies in foreign markets. On the other hand, while the removal of inter-provincial barriers would probably lead to a more efficient Canadian industry overall, such preferential practices have also led to the development of strong vested interests which would be reluctant to give up guaranteed markets.

In addition to provincial purchasing policies, two of the five major vehicle producers are provincially-owned Crown corporations - Flyer (Manitoba) and UTDC (Ontario).

The federal government has also been involved in the development of the urban transit industry. Recently, it made federal assistance available to the Vancouver ALRT (Advanced Light Rapid Transit) project to test the feasibility of Canadian technology. DRIE and Department of External Affairs have recently developed and undertaken a joint marketing strategy and program to maximize the impact of the Canadian industry in the U.S. market. However, in general the federal role is limited, certainly relative to the American federal role.

Vehicle standards are highly concurrent in the two North American markets.

Impact of Free Trade

Generally-speaking, the Canadian industry is very competitive with its U.S. counterpart. This is in large measure because the vehicle manufacturing industry in the U.S. received a series of setbacks in the 1970's, with the result that all producers of urban rail vehicles except one either got out of urban transit, or shut down altogether. Budd, the only remaining U.S. producer, is now foreign-owned. The Canadian bus industry, by continuing to produce older and more efficient designs when U.S. firms were being forced to develop new products by the U.S. federal government, carved out a large niche for itself in the U.S. market. In fact, given the relative weakness of the U.S. urban transit industry, one of the major stumbling blocks to sectoral free trade in urban transit has been the fact that the U.S. does not feel the benefits would be balanced, and has in the past wanted an agreement to be linked with trade liberalization in other industries.

The removal of tariffs would not lead to any significant increase in Canadian access to the U.S. market, since U.S. tariffs are insignificant already. It would force a certain amount of rationalization in Canada, since the industry would be forced to cope with increased competition from American firms and foreign multinationals located in the U.S. The feasibility study suggested that Canadian suppliers in low-technology or older technology sectors would have to rationalize considerably, but that producers of items requiring specialized knowledge of customer specifications would probably retain their market share.

A potentially more serious concern would be raised if the tariff on buses was removed: producers would no longer have any incentive to meet the Canadian content requirements in the Auto pact so that GM, for example, might choose to shift its bus production lines entirely to the U.S.

The more significant arguments in favour of trade liberalization respond to the issue of NTBs. An increase in content requirements by the U.S., for example, would force vehicle producers to either obtain even more of their components in the U.S., thus seriously damaging the Canadian components industry, or to withdraw from the American market (a virtual impossibility). The removal of exemptions for products and purchases under \$500,000 from the Buy America provisions has already hurt components manufacturers, and has been particularly damaging to suppliers of products for vehicle operators. Thus, Canada must first and foremost prevent increases in the stringency of Buy America policies and other NTB's; additionally, many Canadian firms would benefit from the removal of U.S. NTBs altogether.

On the other hand, the U.S. industry came to be in a weak state because the domestic market was left unprotected in the 1970s. As a result, the U.S. is unlikely to readily give up the protective regime it has subsequently established. At the very least, it would want the removal of provincial restrictions as a quid pro quo. This loss of a protected market may be opposed by some major producers, and it may be difficult to enforce, especially when the corporation in question is provincially-owned. In addition to forcing some adjustments within

Canada, the removal of Canadian barriers would expose this country's producers to competition in the domestic market from the European and Japanese subsidiaries which have located in the United States as a result of Buy America regulations. A UTDC representative, for one, feels that Canadian firms might fare poorly against such competition, because overseas competitors have larger domestic markets and, generally, a more mature product base. A government source, on the other hand, feels similarities between Canada and the U.S. in terms of regulation, urban environment, etc. would provide Canadian firms with a significant advantage vis-à-vis offshore (ie. non-North American) suppliers.

One of the major reasons for negotiating free trade would be to prevent the outflow of capital investment which Buy America has encouraged. For example, both Bombardier and Ontario Bus Industries (OBI) have established permanent production facilities in the U.S., originally to qualify as "domestic" American producers, while UTDC and Flyer are both prepared to bid "domestic" by sub-contracting final assembly work to American firms. An increase in the stringency of Buy America regulations would hasten this capital outflow. However, it is not clear that free trade would put a stop to this trend. It might reasonably be expected to slow, and possibly halt it; however, it is unlikely that OBI and Bombardier would return all assembly activity to Canada, especially given the political and marketing advantages of being viewed as an "American" company.

Labour adjustments and regional adjustments are probably coming with or without free trade, because of the over-capacity which presently exists in the industry. In the event of liberalized trade, some rationalization would ensue due to increased American and overseas competition. It would probably lead to a consolidation of industry activity for relatively short-run orders and particularly in those areas where Canada's technology is "exploring new frontiers". However, there would be as much or more adjustment as a consequence of the removal of interprovincial barriers. Increased national consolidation to address world market opportunities could be expected, as well as the disappearance of some firms which are presently kept alive because of non-competitive provincial government purchases.

Conclusion

Several government representatives we spoke to seemed to favour free trade, largely because they wanted to prevent the possibility of further protectionism in the U.S. which would hasten capital outflow among producers who could afford to start up in the U.S., and force many closures among those who could not. The industry appears to be divided and, in some cases, rather indifferent on the issue. The position of large vehicle producers is in part determined by the weakness of the American industry and the fact that their greatest competition is with each other. Thus, Bombardier and OBI are not anxious to see their competitors - UTDC and Flyer - gain cost-free access to the U.S. market through the removal of Buy America provisions, since they have already invested in production facilities in the U.S. UTDC, in a recent

interview, stressed the disadvantages of exposing relatively young, high technology firms (like themselves) to unbridled competition from overseas firms producing in the U.S. market. They also made the argument that it was in Canada's long-term interest to nurture young, technology-intensive industries behind protective barriers before exposing them to the possibly killing pressure of international competition (the "infant industry" argument, enhanced by high-technology considerations).

In the feasibility study, Bombardier is represented as seeing little benefit in the removal of Buy America provisions, but as seeing more advantage in the removal of interprovincial barriers within Canada. UTDC is reported to have favoured the removal of the final assembly requirement in the STAA, but was not prepared to give up the benefits of Ontario government buying practices in return. More recently, a representative of UTDC expressed the view that they were not especially upset by the final assembly requirement, because they had little trouble sub-contracting this stage of production. According to Lal's feasibility study, both Canadian urban rail firms recognize the long-term potential benefits of North American trade liberalization, if it is considered only on a bilateral basis.

The bus manufacturers are reported as being fairly unanimous in favouring some liberalization of the North American market, though each has specific priorities, and only GM seems to be particularly keen on the complete removal of Buy America provisions. All favour the retention of the existing tariff regime which gives Canadian producers

duty-free access to the U.S., but limits the duty-free access of American companies to firms which are established in Canada.

In the feasibility study, both suppliers to operators and suppliers to vehicle producers are reported as being in favour of liberalization of trade and the removal of procurement practices on a bilateral basis with the U.S. This is not surprising, considering the loss of the exemption from Buy America for sales under \$500,000 has severely inhibited the access of these firms to the American market. Further restrictions could be expected to lead to many closures among these firms. However, one government official reports a surprising lack of concern among most component manufacturers (with significant exceptions) about Buy America restrictions. He suggested two possible explanations for this apparent lack of concern: first, that they were still making sufficient sales by filling the Canadian content shares of Canadian vehicle manufacturers; and second, that they had sales outlets in the United States which allowed them to circumvent the Buy America restrictions.

There are several political obstacles to free trade in the urban transit sector. The first is the competing and divergent interests of the major vehicle producers, as discussed above. A second is the infant industry argument: from an industrial policy perspective, Canada would not want to relinquish the policy making freedom to protect and subsidize "sunrise industries" until they are internationally competitive. Finally, given the relative weakness of the U.S. industry, it is not clear how much the U.S. would ask Canada to offer in return

for the removal of Buy America and other trade restrictions: there are some indicators that Canadian industry and governments might find the price unacceptable, at least in a sectoral context.

Whatever steps are finally taken, the Canadian urban transit sector remains one of Canada's more exciting manufacturing prospects. We can do ourselves a favour by taking steps to consolidate its meteoric growth, so that it remains a viable industry in the decades ahead.

Appendix

Urban Transit
Sector Definition by Canadian International Trade
Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Vehicle Systems - Buses and Chassis	58729	58729
Self-Propelled Rapid Transit and Railway Cars	57509	-

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

OCEAN AND MARINE INDUSTRIES

Description

The ocean and marine industries sector is not large in terms of production or employment, but it is important regionally and therefore, politically sensitive. Our Statistics Canada-based definition was considered accurate by the Canadian Shipbuilding and Ship Repairing Association (CSSRA), but deserves some clarification. The sector must be sharply divided between commercial and recreational marine products, which are effectively separate industries and are represented by separate associations - the CSSRA for commercial products, and the Allied Boating Association (ABA) for recreational products. Within the commercial marine products group, the CSSRA distinguishes between shipbuilding and repairing yards on the one hand, and allied industries on the other. Allied industries include a very diverse range of products - for example, heavy machinery (generators, etc.), electronic products, rubber products (e.g. gaskets) and specialized paints. Within the recreational marine industry, sub-sector divisions are not as significant, although, there is a major subdivision between sailboat and powerboat manufacturers.

Worldwide, the commercial marine sector (i.e. the shipbuilding industry) is characterized by a high degree of government involvement and protection. It is widely viewed as an important component of strategic and industrial development policy in most industrialized and industrializing countries. As such, export markets are generally highly

controlled particularly through non-tariff barriers (Canada is one of the few countries with tariff barriers), and domestic market sales receive extensive government support. In Canada, the industry is concentrated in areas of traditionally high unemployment and low industrialization (Quebec and the Atlantic provinces, as well as the West Coast and smaller centres in Ontario) thus enhancing the industry's social and political importance as an employer. Its labour intensive character hurts its competitive position vis-à-vis such low-cost nations as Brazil, Taiwan and South Korea but serves to further enhance its employment function; and it has important industrial spin-off benefits in such industries as steel and electronics. Finally, it operates on the basis of a small number of very large orders, resulting in extreme "lumpiness" in sales and wide variations in employment and production levels. Thus, employment in shipbuilding and repairing yards has dropped from over 14,000 in March of 1982 to 8,051 at the end of November of 1984. The CSSRA estimates that when yard employment is at a "reasonable" level of 13,000-14,000, it creates employment in allied industries of 4,000-5,000.

Firm sizes vary widely, with 16 of the 27 shipbuilding and repairing yards employing 100 or more workers. This section of the industry is 95 per cent Canadian owned; allied industries have a considerably higher percentage of foreign ownership. Some allied firms have gone to world product mandates, however, this practice is not extensive. Labour is highly unionized, and is relatively mobile. In spite of the reluctance of workers to give up seniority at shipyards, Canadian Employment and Immigration Commission figures show that

approximately 25 per cent of those still employed in the industry moved inter-provincially in the ten year period between 1974 and 1983. This is a reflection of the highly variable fortunes of the industry.

The recreational marine industry is characterized by a large number of small firms, whose size is restricted in part due to the seasonality of the industry, the small size of the Canadian market, and the relatively high cost of transportation to distant markets. Most firms have under 50 employees, although a few of the sailboat manufacturers exceed this number. The great majority of firms are Canadian-owned, with only a few powerboat manufacturers and the major engine manufacturers being owned by American interests. In general, sailboat manufacturers are more export oriented than powerboat manufacturers. In all, the Allied Boating Association represents approximately 60 manufacturing interests in addition to wholesalers of boats, engines, and accessories; these member firms account for the vast majority of production in Canada, although they are a minority of the total number of enterprises in the industry. Labour in the industry is characterized by low levels of unionization.

Trade and Protectionism

Table 1 illustrates the levels and nature of Canadian-U.S. trade in ocean and marine industries. In general, industries in the sector have relatively low levels of trade with the United States. This is particularly striking in the boats and ships sub-sector (i.e. shipbuilding and repairing) where, although total volumes of Canadian

Table 1
Canadian Trade with the United States, 1978 and 1983:
Ocean and Marine Industries Sector
(\$ Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Boats & Ships	35,431	55,981	33,673	1,061	1,676	4,711	53,451	28,962
Marine Engines & Parts, Commercial & Recreational	21,259	33,585	10,313	105,553	166,750	117,039	(133,165)	(106,726)
Parts & Accessories for Ships & Boats, n.e.s.	41,367	65,351	64,393	17,808	28,133	28,790	37,218	35,603
Pleasure Craft	21,845	34,510	43,418	28,178	44,515	33,565	10,005	9,853
Drilling Equipment Non-Trade (Added 1982)	N/A	N/A	366	-	-	-	-	366
Total Ocean Marine Industries Sector	119,901	189,417	152,163	153,141	241,929	184,105	(52,512)	(31,942)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars.

2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

and American production are small by international standards, the value of production is quite high--in 1982, the value of new construction and ship repairs in Canada was just under \$900 million. The low value of Canada-U.S. trade illustrates that the shipbuilding industry in both countries is quite protected, and oriented primarily towards the domestic market. Indeed foreign-built ships are restricted from participating in U.S. coasting operations under the Jones Act, as will be discussed later. Compared to its trade with the rest of the world, Canada's trade with the United States is small: whereas exports of ships and boats to the U.S. were worth \$33,673,000 in 1983, total exports were \$179,799,000; and whereas imports from the U.S. were only \$4,711,000, total imports were \$778,144,000 (source: Statistics Canada, in CSSRA 1983 "Annual Statistical Report"). Overall, Canada maintained a \$28 million surplus in its trade of ships and boats with the U.S.

Trade in the marine engines and engine parts sub-sector is relatively much larger, and entirely responsible for Canada's overall bilateral deficit position in the ocean and marine industries sector. Canada ran a \$107 million deficit in this sub-category in 1983. In parts and accessories, Canada was in a surplus position of \$36 million in 1983.

In pleasure craft - i.e. the recreational marine industry - Canada reversed its position from a \$10 million deficit in 1978 to a nearly \$10 million surplus in 1983. The reason for this reversal is probably primarily related to the favourable exchange rate of the Canadian dollar and to cyclical factors--Canada had a trade surplus in this sub-sector in the early 1970's before imports jumped through the '70's.

Offshore drilling rig equipment and supplies constitutes a special case. Although Canadian exports to the U.S. were valued at only \$366,000 in 1983, and were not recorded for 1978, our export trade with the "high seas" was over \$147 million. This number represents goods produced in Canada which are not expected to come back (therefore constituting exports), but which are frequently destined for use by companies undertaking oil and gas exploration in the Canadian offshore. Therefore, it is treated as a non-trade item. Much of this equipment will in fact be sold to American-owned companies, however since it stays offshore, it is not theoretically an export to the United States.

Interestingly, both exports and imports decreased in real terms between 1978 and 1983. This is a reflection of the hard times the industry has fallen upon in recent years.

Table 2 illustrates the fact that the ocean and marine industry is generally highly protected. Average tariffs in 1983 on boats and ships were 19.9 per cent. This represents the average of several different tariff rates: a general rate of 25 per cent, a rate of 20 per cent on drilling rigs (the rate is adjusted down to reflect the idea that a rig is part vessel and part equipment), and no duty at all on fishing vessels over 30.5 meters or 100 feet (this duty-free item is an historical anomaly which the CSSRA would very much like to see corrected). Although the Table shows a small drop in overall ship and boat tariffs since 1978, tariffs on marine products in Canada have

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Ocean and Marine Industries Sector
(\$ Canadian thousands)

Sub-Sector	(1)		(2)		(3)		(4)		(4) ÷ (3)	
	Total Imports		Duty Free Value		Dutiable Value		Duty Collected		Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Boats & Ships	1,061	4,711	631	2,828	971	1,883	217	374	22.4	19.9
Marine Engines & Parts, Commercial & Recreational	105,553	107,039	91,898	104,124	13,655	12,915	2,104	1,636	15.4	12.7
Parts & Accessories for Ships & Boats, r.e.s.	17,808	28,790	11,534	22,045	6,274	6,746	1,068	985	17.0	14.6
Pleasure Craft	28,178	33,565	716	5,627	27,462	27,938	5,023	4,672	18.3	16.7
Total Ocean and Marine Industries Sector	153,141	184,105	104,779	134,623	48,362	49,482	8,412	7,667	17.4	15.5

Statistics Canada, External Trade Division, 1984.

generally not kept pace with the rate of international tariff reductions.*

General tariffs on marine engines and parts, and on ship parts and accessories have dropped on average nearly 3 per cent, but remain high: 12.7 per cent and 14.6 per cent respectively. However, in both cases, but particularly in the case of marine engines and ship accessories, the majority of imports are duty free: only 11 per cent of the trade during 1983 of marine engines was dutiable.

In the recreational marine sector, tariffs remain at an average of 16.7 per cent - a slight drop from the 1978 level of 18.3 per cent, but still highly protective, especially relative to United States tariffs which are less than 4 per cent. The Allied Boating Association feels high tariffs are justified due to seasonality, small market size, high transportation costs, and other uniquely Canadian factors which they feel hurt their competitiveness vis-à-vis American manufacturers. However, they are also taking steps to encourage increased competitiveness among their membership, in anticipation of an expected continuation of tariff reductions.

* Government sources say it is possible to suggest that the tariff effectively rose, since some special reduced tariffs (like the British Preference) were removed in 1983, and because tariffs were extended to the offshore area for oil and gas-related activities.

Table 3 outlines Canadian and United States tariffs on some comparable ocean and marine products. In general, the table suggests that the Canadian ship and boatbuilding industry is more heavily protected than the American one. However, such a conclusion is misleading in the case of shipbuilding, where the United States' Jones Act constitutes a non-tariff barrier so stringent that virtually all foreign-built ships are excluded from American service (this Act will be discussed in more detail subsequently). As suggested in Table 3, most marine engines come into Canada duty free, obviously being "of a class or kind not made in Canada". Similarly, many parts and accessories - for example, compasses and anchors over 18 kg. - come into Canada free of duty.

In the recreational marine sector, the items cited clearly demonstrate the disparity between Canadian and American levels of protection. In effect, the U.S. market is open to Canadian producers, while the Canadian market is virtually closed - or at least severely restricted - for U.S. producers. This is a state of affairs which, according to Peter Jacobs of the ABA, is the cause of considerable antagonism among American pleasure boat manufacturers. Canadian producers, on the other hand, have nothing to gain from a free trade agreement. As stated previously, they feel that Canada's peculiar market conditions put them at a disadvantage which serves to justify this tariff differential. However, also as mentioned previously, the ABA recognizes the probability that this differential will steadily narrow, and is organizing competitiveness seminars for its membership to help them prepare for this eventuality.

Table 3

**Selected Products in the Ocean and Marine Industries Sector:
Canadian and United States Tariffs, 1984**

Product	Canadian Tariff	American Tariff
Ships for Commercial Use	25.0%	free*
Drilling Rigs and Platforms	20.0%	5.7%
Commercial Fishing Vessels, over 30.5 m.	free	free*
Open Sailboats not over 9.2 m.	15.9%	1.7%
Pleasure Boats over 9.2 m.	18.8%	2.8%
Diesel and Semi-diesel Engines (of a class of kind not made in Canada)	free	4.2%
Anchors: Less than 18 kg. Over 18 kg.	11.4% free	4.9%
Gyroscopic compasses	free	4.5% ad.val.

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84.

- * Although the U.S. tariff schedule lists these products as free, their importation for coasting use is in fact prohibited under the Jones Act.

The CSSRA feels that Canadian NTB's in the shipbuilding industry are weak and easily circumvented relative to those of other nations. The CSSRA asserts in its brief to the Commission that some government policies even encourage the substitution of foreign-built ships for domestic ships. For example, it feels that the temporary entry rate duty of 1/120th per month of the ship's value has not kept pace with increases in interest rates (it was established when interest rates were at 3%), and therefore aids leasing companies by allowing them to lease ships temporarily at unrealistically low rates, and hence to re-invest funds not spent for permanent entry, or for a more realistic temporary entry fee. It also feels that a leasing company should be required to apply for temporary entry at least 90 days in advance, since at present application can be made to the Canadian Transport Commission the same day the ship in question is to begin operation, resulting in only a cursory review of the application by the CTC. The net result, the CSSRA suggests, is that shipping interests are encouraged to lease foreign-built ships, rather than purchase, lease or construct Canadian vessels. Even some federal departments, it is suggested, find ways to circumvent the payment of duties in order to bring in offshore-built equipment duty free. Nevertheless, the industry currently relies on government procurement for its survival in Canada. In 1983, 20 of 31 ships on order or under construction were government contracts. Most naval work goes to Canadian yards, as do most Coast Guard, Fisheries and Oceans, and Transport orders. Hence, in the context of the highly controlled international shipbuilding industry, government policies are a mixed blessing for the Canadian industry.

In the U.S., the Jones Act constitutes the major NTB, and appears to be pretty much untouchable. By this Act, all "internal" waterborne trade (including, for example, cargos to Hawaii and tanker runs from Alaska) must be carried in U.S. built ships. Ships for use in international trade have in the past received very substantial construction subsidies, but these have been eliminated in the last two years (the Canadian subsidy program, providing 9 per cent of the cost of new construction, will be phased out for ships not delivered by June 30, 1985). There are also subsidies for ship operation, and government loans, loan guarantees, and corporate income tax shelters to facilitate the purchase of U.S. built ships. The net effect of various U.S. NTB'S and government programs is to close the American market to new ships from outside the U.S. Even under the Defence Production Sharing Agreement, which theoretically ensures free trade in defence products, the Burns-Tollefson Amendment ensures that all new ship contracts and many allied industry contracts are restricted to U.S. interests.

In the recreational marine industry, there are virtually no noteworthy NTB's on either side of the border. However, some U.S. manufacturers are calling for the introduction of NTB's directed at Canada, in light of this country's high tariffs. There are a few other trade-related government practices in both countries, including product standards which are not very difficult to meet at present but which could constitute potential barriers. In the United States, the recently-terminated Domestic International Sales Corporation (DISC) program forgave U.S. exporters 50 per cent of income tax on export sales profits. Some of its functions have been taken over by the Foreign

Sales Corporation (FSC). In Canada, the government provides manufacturers with some financial support to cover boat show costs.

Also in both countries, government export financing is available. In Canada, EDC financing and production subsidies of 12.5-17% for exported vessels (20% in 1976) helped the industry to achieve a strong export performance in the 1970s. However, the CSSRA is concerned about the fact that Canada is probably the only country in the world which does not provide concessionary financing (in the U.S. it is called Title XI financing) to facilitate production for the domestic market. At the present time, the Association's focus is more on increasing its share of the Canadian market for specialized products, and less on the limited potential opportunities for increasing sales abroad during the current international shipbuilding crisis. U.S. producers also seem to have a domestic focus, with the Jones Act preserving the American market for their exploitation. U.S. export performance is poor: it ranked 13th in merchant vessel construction and orders in 1983, with almost all orders for its domestic market.

In Canada, three shipyards are wholly or partially owned by provincial governments: the large Marine Industries yard in Quebec (60 per cent), the medium-sized Marystown yard in Newfoundland (100 per cent) and the small Georgetown shipyard in Prince Edward Island (100 per cent).

Impact of Free Trade

In shipbuilding and allied industries, the impact of free trade would be mixed. The CSSRA feels that the Jones Act is sacred, and that Canadian yards could therefore expect few new opportunities for original construction. Furthermore, a DRIE representative suggests that the shipbuilding industry in both countries currently has an overcapacity, and that there would be few new market opportunities for commercial construction even with a free trade agreement. However, some of the larger firms feel they would benefit significantly from increased repair work on U.S. ships which is an important (30 per cent of value) and relatively stable part of marine business. This is an area in which Canadian yards seem to be very competitive. Some American ships are already choosing to come to Canadian yards for repairs, in spite of 50 per cent U.S. tariffs for non-emergency repairs--twice as high as the current Canadian rate of 25 per cent. Likewise, some of the larger allied firms expect they would benefit from increased sales of marine products to the U.S. and therefore from increased economies of scale. On the other hand, it is the view of the CSSRA that both small yards and smaller allied firms would face a difficult time adjusting to increased competition and a more liberal trading environment. Some smaller yards would be affected very little by the change, since they are quite competitive and generally serve regional markets. However, in general, only the largest firms would be able to readily take advantage of the new opportunities provided by liberalized trade.

If the issue were simply one of competitiveness, the CSSRA feels that Canadian firms could compete with American firms. It bases this assessment on the fact that Canadian firms beat out American firms in bidding on several recent contracts for ships built for Caribbean interests. However, neither country's industry is in the forefront of international competitiveness. NIC's and Japan, with relatively cheap labour, are well ahead in this labour intensive industry. Furthermore, as suggested previously, it is doubtful whether the U.S. would allow shipbuilders from any other country free access to the new ship market, given the long history of the Jones Act.

Labour is already hard-pressed in the sector. There is underemployment and many surplus workers waiting to be called in at shipbuilding centres in Canada. However, it is relatively mobile: 25 per cent of the present labour force moved inter-provincially between 1974 and 1983. Thus, labour might adapt readily to free trade-induced adjustment, especially if it resulted in increased overall levels of employment and enhanced job security. As the industry is limited to locations in coastal areas and the Great Lakes and Seaway regions, regional adjustment would not be massive.

Since the shipbuilding and repairing industry is predominantly Canadian-owned, disinvestment is unlikely; it is more of a problem in allied industries, where some foreign-owned subsidiaries fear they might be phased out. However, the number of firms and workers affected would not be large.

In the recreational marine industry, Canadian manufacturers would have virtually nothing to gain from free trade, since access to the U.S. market is almost free now, and they would have a considerable amount to lose if they forfeited their 16-18 per cent tariff protection. There is considerable variation in the competitiveness of Canadian firms. Some have been producing for the U.S. market for some time, and could adjust relatively easily, while others would have to make a very concerted effort to adjust, and ultimately might not be able to do so. As mentioned previously, the ABA is organizing seminars in order to assist member firms in becoming more competitive. At present, Canadian sailboat manufacturers are more export-oriented than powerboat manufacturers and would, therefore, be likely to adjust more easily.

Given the fact that the recreational marine industry is predominantly Canadian-owned, there is little danger of disinvestment. Because of the rationalization which would be likely to result from free trade, there would inevitably be some labour adjustment problems. However, since the industry is already centered in Ontario and Quebec, with a smaller presence in B.C. oriented to the West Coast market, free trade would probably have very little impact on other regions.

Conclusion

The shipbuilding and allied industries are, according to the CSSRA, generally favourable on the issue of free trade. However, there are firms with a strong vested interest in the status quo. Furthermore, the industry wields surprising political clout, largely because it is often

a very important employer in poorer regions of the country. Thus, firms that are opposed to free trade could constitute a formidable political barrier. In general, large yards which could exploit increased repair work opportunities would favour free trade, as would some of the larger allied firms, which have the capacity to exploit expanded market opportunities. Smaller firms would face the largest adjustment problems, and would thus be most likely to oppose free trade.

Multilateral liberalization is out of the question, since virtually all countries are highly protective of their shipbuilding industries. Furthermore neither Canada nor the U.S. could compete successfully against unimpeded Japanese and NIC competition. It is unlikely that Canadian interests could gain access to the U.S. market for the sale of new ships, since the Jones Act is so firmly entrenched. Thus, the opportunities available from trade liberalization are limited; the Canadian industry is far more concerned with gaining control of the domestic market and eliminating openings (or loopholes) for foreign competitors than it is with foreign trade issues. The CSSRA asserts that the terms on which a free trade agreement is reached will ultimately determine its response, and that sufficient time and appropriate conditions for adjustment will be particularly important.

In the recreational marine industry, virtually all interests would oppose free trade, because they have nothing to gain from it. They feel the tariff protection they enjoy is justified on the basis of the shorter Canadian season, the smaller market, and the higher transport and labour costs which face Canadian producers. In general, the larger

sailboat manufacturers, which are quite export-oriented already, would adjust most easily to free trade while smaller powerboat manufacturers would probably face the most difficulties.

However, in spite of its public opposition to free trade, the recreational marine industry has accepted that there is a strong possibility they will not continue to enjoy the same tariff protection. In anticipation of declining tariff protection, the ABA is organizing seminars to improve member firms' competitiveness. They, like other industries, would work hard to adapt to a free trade regime; they do not anticipate their own demise.

Appendix

Ocean and Marine Industries Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Boats and Ships	59199	59199
Marine Engines and Parts, Commercial and Recreational	592	59285
Parts and Accessories for Ships and Boats, n.e.s.	593	59339
Pleasure Craft	59158, 59169	59158, 59163 59169
Drilling Equipment Non-Trade (Added 1982)	N/A	99410

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

AIRCRAFT

Description

The aircraft industry in Canada is one of the two manufacturing sectors (the other one being the automobile industry) in which bilateral free trade with the United States already exists. There are several ways of looking at this sector. The Statistics Canada-based definition is considerably more focused than that of the aerospace industry, which sees the aircraft industry as one sub-sector. The aircraft sector, according to Statistics Canada, manufactures the following end products: aircraft complete with engines; aircraft engines and parts; and aircraft assemblies, equipment and parts. The industry itself also includes the production of space technology and avionics (sophisticated electronics for the aviation industry). In this sector study, these products are not included in the aircraft sector because of a considerable overlap with the electronics sector. The conclusions regarding free trade, however, also apply to avionics.

According to the Canadian Department of Regional Industrial Expansion, Canada is the second-largest user of a number of types of aircraft in the Western world. This statistic does not mean that Canadian aircraft products have a viable domestic market base as the demand is fragmented by numerous types and models. To the contrary, the industry exports nearly 80 percent of its product in a typical year. This sector is highly concentrated in terms of sales: 85 percent of business is conducted by companies doing over \$25 million in sales.

Roughly 50 per cent of the firms in the Canadian aircraft business are Canadian-owned or Canadian-controlled.

Liberal trade patterns and close government-industry links characterize the aircraft sector. Canada now has tariff-free global access to markets in civil aircraft as a result of the 1980 multilateral Agreement on Trade in Civil Aircraft. Through the Canada-United States Defence Production Sharing and Development Arrangements there is tariff-free access for military aircraft to the American market. The existence of this liberal trading environment has meant that the industry could operate efficiently with the world product mandate method. It recognizes the advantages of following this strategy. There is, however, a high level of specialization of production which entails a corresponding flow of Canada-U.S. intracorporate trade.

State support to the aircraft industry is by no means unique to this country. Although, Canadian links may be more overt and articulated (i.e. ownership of Canadair and de Havilland) than those of many countries, a common Canadian air industry response is to compare Canadian support to that offered by the American, British, German, and French governments to their domestic industries. These governments are major purchasers of military air technology, and as such, award sizable production and research contracts to their industries.

This industry is oriented to a market where the price of the product is important, but not necessarily the final determinant of demand. The industry did, however, point out that a contract could be

won by changing the financing by half a percentage point. The firm, whether it manufactures aircraft engines, instrumentation, or complete aircraft, must be able to "sell" an untarnished reputation for product quality and corporate reliability.

There are approximately 140 firms operating in Canada in the larger field of aerospace. There are few major firms: Canadair Limited, McDonnell-Douglas of Canada and de Havilland Aircraft of Canada, which manufacture airframes and parts; Pratt and Whitney Canada, which manufactures aeroengines and parts and has two-thirds of the world market for small gas turbines; Spar Aerospace Limited and Bristol Aerospace, which make space-related products and airframe components; and Litton Systems, Computing Devices, Canadian Marconi, Garrett (which has 90 percent of the world market for temperature control devices), Lee, and CAE Electronics, which manufacture avionics equipment. In addition to some medium-sized companies, there are also about 80 small companies that have sales of less than \$1-million. The industry is centered in Ontario and Quebec. In 1980, 92 per cent of employees were working in these two provinces, 8 per cent were employed in the West, and 0.7 per cent were working in Atlantic Canada.

One final identifying feature of the aircraft sector is that it needs to recruit highly-trained, highly-specialized personnel. It admits that some kinds of skilled people are difficult to recruit from the Canadian labour market. In the larger aerospace industry, 41,000 people were employed in 1982. The sector is partially unionized--organized labour is linked closely to their American

counterparts. The fact that some firms are unionized while others are not has created some labour-management problems, according to the Aerospace Industries Association of Canada (AIAC). There is, however, no wage parity between Canadian and American labour in this industry.

Trade and Protectionism

The following tables present the Canadian aircraft industry's trade position with the United States, the level of protection applied by Canada to American aircraft and parts, and comparable Canadian and American tariff levels on common products. It should be noted (a) that the formal Multilateral Agreement on Civil Aircraft came into force in 1980; (b) that the volume figures presented here are lower than aerospace industry statistics because the avionics and space industries have not been included for reasons mentioned previously; and (c) that imports and exports in this sector fluctuate tremendously from year to year because of the high per item cost and because of large government purchases which are not awarded on an annual basis.

Table 1 shows the levels of Canadian-American aircraft trade for 1978 and 1983. Overall, the Canadian trade position for these two years was a persistent deficit although it was slightly reduced from \$377 million in 1978 to \$337 million in 1983. The big problem in the trade balance stemmed from the "aircraft engines and parts" sub-sector. While the value of exports from this sub-sector decreased from \$434 million to \$410 million, the level of imports rose from \$339 million in 1978 to \$415 million in 1983. The trade surplus for aircraft engines

Table 1

Canadian Trade with the United States, 1978 and 1983:
Aircraft Sector
(\$ Canadian thousands)

Subsector	Canadian Exports			Canadian Imports		Trade Balance	
	1978 ¹	1978 ²	1983	1978 ¹	1978 ²	1978 ²	1983
Aircraft, complete with engines	32,945	52,046	315,951	305,192	482,136	(430,090)	(482,383)
Aircraft engines and parts	274,533	433,701	410,181	214,602	339,024	94,677	(5,076)
Aircraft assemblies, equipment and parts	232,855	367,859	664,251	259,034	409,216	(41,357)	150,693
Total Aircraft	540,334	853,608	1,390,383	778,828	1,230,376	(376,768)	(336,767)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars
2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

and parts decreased from \$95 million to a deficit of \$5 million. By 1983, the "aircraft, complete with engines" sub-sector had further weakened its already poor trade position. Its deficit rose from \$430 million in 1978 to \$482 million in 1983. The one area that did improve its trade position was the aircraft assembly business. A boost, from a \$41 million deficit in 1978 to a \$151 million surplus in 1983, was due to a large increase in exports (from \$368 million to \$664 million). In this sub-sector, the volume of trade rose dramatically. Trade turnover (the sum of exports and imports) rose from \$2.1 billion to \$3.1 billion in the six years.

Internationally, the aircraft industry experiences few tariff barriers. Canada-U.S. sectoral trade is virtually free, a situation which is illustrated in Table III. This arrangement has been the product of the Canada-United States Defence Production and Development Sharing Arrangements and the 1980 GATT Agreement on Trade in Civil Aircraft, which is a multilateral agreement signed by aircraft-producing countries. The pattern of trade, according to AIAC, shows that Canada imports aircraft products from the U.S. that are considered "high-tech" but exports "low-tech" products in return.

Table 2 shows that while tariffs are supposed to have been eliminated in this sector, implementation is not totally effective. In 1978, \$348,000 was collected in tariffs, and in 1983, \$322,000 was collected. However, these amounts represent only a negligible percentage of the total aircraft imports from the U.S., i.e., 0.05 per cent and 0.02 per cent correspondingly. It was pointed out that such

tariff levels would only exist as a result of misclassification of items, rather than represent a contravention of the DPSA or the Agreement on Trade in Civil Aviation.

Non-tariff barriers exist in this trade between Canada and the United States. The Canadian industry pointed out that the Canadian government's support programs (e.g., The Defence Industry Productivity Program) and government ownership of de Havilland and Canadair are construed by American firms as being disruptive to trade. The Canadian industry association, the Aerospace Industries Association of Canada (AIAC), identified as American NTBs the Buy America Act, the Small Business Act (whereby a proportion of a government contract must be allocated to small businesses), and security precautions (which limit specifications for certain military contracts to American firms and by so doing, put limitations upon technology transfer to Canadian firms for reasons of national security). The Association expressed an interest in having the Canadian government negotiate an upgrading of the Defence Production and Development Sharing Arrangements to the status of an international bilateral treaty, but only if this approach could be used to eliminate these American NTBs from the relevant legislation.

The Canadian government offers important support to the aircraft industry. The major funding program is the Defence Industry Productivity Program (DIPP) which was designed to compensate for a shortfall in both Canadian government defence-related research and development and procurement of Canadian products. AIAC points out that many Canadian areas of excellence in the aircraft sector owe their

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Aircraft Sector
(\$ Canadian thousands)

Subsector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4)/(3) Tariff (%)*	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Aircraft, complete with engines	305,192	798,334	305,151	798,303	40	31	4	5	10.0	16.1
Aircraft engines and parts	214,602	415,257	214,322	415,067	280	191	22	22	7.9	11.5
Aircraft assemblies, equipment and parts	259,034	513,558	257,165	511,557	1,869	2,001	322	295	17.2	14.7
Total Aircraft	778,828	1,727,150	776,638	1,724,926	2,190	2,223	348	322	15.9	14.5

Statistics Canada, External Trade Division, 1984.

* Because a very large proportion of products in this sector enter Canada from the USA on a duty-free basis, the tariff rates expressed here are relevant only to a small amount of trade.

Table 3

**Selected Products in the Aircraft Sector:
Canadian and United States Tariffs, 1984**

Product	Canadian Tariff	American Tariff
Civil aircraft; aircraft engines for use in civil aircraft	Free	Free
Parts of aircraft	Free	Free
Parts of aircraft engines	Free	Free
Military aircraft, not including engines (covered under Defense Production Sharing Arrangements)	Free	Free
Aircraft engines when imported for use in the equipment of aircraft	Free	Free

Revenue Canada, Customs & Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84.

development to this program, including STOL aircraft, small gas turbines, unmanned surveillance systems, and various aircraft subsystems (e.g. temperature control and navigation systems).

Many federal government departments are actively involved in supporting the aircraft industry: (1) the Department of Regional Industrial Expansion offers program funding support; (2) the Department of External Affairs operates the Program for Export Market Development and has the mandate for administering the Defence Production and Development Sharing Arrangements with the U.S.; (3) the Department of Supply and Services handles government purchases from the industry, administers the Canadian Commercial Corporation which acts like an agent for Canadian firms for foreign contracts and is the guarantor of sales; (4) the Export Development Corporation offers conventional sales financing; (5) the National Research Council performs government-funded research and development; and (6) the Ministry of Transport performs licensing and airworthiness testing (which enables the Canadian government to reassure foreign purchasers of product quality).

The American government's support to its aircraft industry is much greater but less specific in nature. The major link is through the government's need to obtain military and space technology and equipment. Therefore, the U.S. government supports its industry through military procurement by the Department of Defence, and through related contracts of the National Aeronautics and Space Administration (NASA). The American Federal Aviation Administration also makes substantial

research and development investments in the industry. The sheer volume of this support makes the Canadian government's efforts insignificant.

The bilateral trade environment is thus characterized by an absence of tariffs, some non-tariff barriers that frustrate the industries on both sides of the border, and strong industry-government relations.

Impact of Free Trade

Since Canadian-American trade in aircraft operates in a tariff-free environment, to make trade freer would entail the abolition of non-tariff barriers. The Canadian industry is strongly in favour of moving in such a direction.

By removing American NTBs, it is thought that economies of scale would be moderately improved, especially if world product mandates were used. A large gain would not be anticipated as productivity is closely linked to other variables, namely the military, and research and development production and associated technological spin-offs. However, a removal of procurement-related and security-oriented NTBs on the American side might improve the access of Canadian small business, and the avionics and military aircraft sub-sectors.

A removal of Canadian non-tariff barriers would not conclusively harm smaller firms in the sector. The industry admitted that some smaller firms could experience minor setbacks, but it also identified a

liberalized bilateral trade environment as a generator of more sales opportunities.

The industry thought that the impact on labour of a free trade arrangement would be positive, as the elimination of NTBs would improve labour conditions.

Finally, freer Canada-U.S. trade would not affect significantly the distribution of regional benefits. The primary consideration is that there are few regional markets for aircraft. The industry is found in central Canada mainly, with some Western Canadian activity (especially in Winnipeg) and since it intends to remain centralized, it is unlikely that the introduction of freer trade would stimulate any relocation.

In summary, the aircraft sector would benefit from increased freer trade with the United States. With more opportunities to compete with American firms, it would be in a position to reduce its bilateral trade deficit. In general, the industry believes it would operate most effectively in a free trade environment and is thus willing to support a governmental agreement in this area.

Conclusion

The aircraft sector is wholeheartedly in favour of increasing the depth and breadth of Canada-U.S. commercial ties. It is an industry that generates and is dependent upon many sales in a government-dominated international market and, as such, it needs to

protect its interests as a small player. Since free trade exists already (if one defines free trade as being the absence of tariff protection), it is difficult to speak of trade liberalization as being only a future possibility. Free trade exists, and is causing few problems in the eyes of industry and government. It is seen as the best option for the Canadian aircraft business.

A note of caution should, however, be injected into this optimistic note. The sector experiences a continuing trade deficit that did not improve over the past six years. But according to DRIE officials, it would have been far worse without free trade, since the Canadian industry could never meet the fragmented Canadian demand economically. It is by no means certain that further trade liberalization (i.e., elimination of NTBs) would improve the Canadian aircraft industry's position, especially if a trade-off is made between an elimination of the Buy America policies on the one hand, and the Canadian government's financial support to the aircraft industry on the other hand.

Appendix

Aircraft Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Aircraft, complete with Engines	601	601
Aircraft Engines and Parts	603	603
Aircraft Assemblies, Equipment and Parts	605	605

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

ELECTRONICS

Description

If one wishes to identify the most dynamic sector in Canada; the one whose products are transforming the production process of the majority of competitive Canadian companies, then one would certainly choose the electronics sector. Because of these characteristics, it has received considerable attention from both the media and governments as being a key to improved national productivity and a challenge to Canadian labour.

This report's breakdown, using Statistics Canada data, divides the electronics sector into five sub-sectors: (1) commercial and industrial telecommunications and other communications equipment; (2) consumer products, (3) components; (4) computers and office machines and equipment; and (5) control and instrumentation. After checking this definition with the federal government and industry, it appears that the categories are quite similar to those used by DRIE and the Electrical and Electronic Manufacturers Association of Canada (EEMAC). A note should be made about the term "informatics", which is not mentioned as a separate category. Informatics would include both telecommunications and computers (e.g. Telidon) and is seen by the Canadian Advanced Technology Association as being a highly relevant sub-sector for the industry, both now and in the future. It was thought, nevertheless, that these sub-sectors should be analyzed individually because each has a unique industrial composition, style of government involvement, and production orientation.

Canada is a small player in this highly internationalized industry. Electronics is a niche-oriented sector, where the Canadian industry has no broad capabilities. In contrast to this assertion, though, the two firms which are considered large by Canadian standards, IBM and Northern Telecom, are really medium-sized by international standards and are diverse, rather than niche-oriented, in nature. In 1983, there were approximately 900 to 1,000 firms in this sector. Most (70 per cent) of the firms have sales of less than \$1 million annually, while a small proportion (8 per cent) have sales that are greater than \$25 million. Northern Telecom alone accounts for 30 per cent of Canadian sales.

The telecommunications sub-sector is the strongest in Canada, with the greatest potential for growth and development. The industry already can claim several Canadian-based multinational corporations (e.g. Northern Telecom) and possesses a strong research and development component. Part of this success can be attributed to the benefits that it has received from the Telecom Canada network of domestic communications monopolies. Its areas of strength are the manufacture and development of fibre optics, switching, electronic office and communications equipment. One Canadian-based firm, Mitel Corporation, claims that it is the largest supplier in the world of PABX systems with less than 100 lines.

The consumer products sub-sector is much weaker by comparison. The market for these products in Canada is well-controlled by Japanese products and brand names (e.g. Panasonic, Hitachi). From 1978 to 1983,

the federal government operated the Television Duty Remission Program. The goal of the program was to encourage firms in the consumer electronics sub-sector either to diversify out of TV manufacturing or to rationalize their Canadian production. Three of the five significant Canadian manufacturers in this sub-sector are Japanese-controlled (Matsushita, Hitachi and Sanyo) while Mitsubishi owns the only Canadian picture tube factory.

The components sub-sector, which produces such products as resistors, connectors and integrated circuits, has not had great success either. It has declined in recent years when the television manufacturing industry, upon which it was heavily dependent, changed to an assembly industry. It has not kept pace with advances in the United States and Japan. There are, however, some areas of strength, namely, the development of the integrated circuit (e.g. the "semi-custom chip") in which Northern Telecom and Mitel have specialized and use exclusively within their own companies, printed circuit boards which have both commercial and defence electronic applications and connectors which are mainly produced by subsidiary companies of U.S. parents. This sub-sector receives some government support through federal and provincial microelectronics centres which offer R & D engineering and production assistance on a firm-by-firm basis.

The computers and office equipment and machines sub-sector is one which has started to utilize the world product mandate system of production (i.e. firms such as Control Data, NCR). One finds, however, that the proportion of research and development that one would expect in

this industry is not evident, partially as a result of the high level of foreign ownership. Some advances are, however, being made in developing "office of the future" products by such companies as AES which is controlled by the Canada Development Corporation, and Micom which is owned by Phillips, a Dutch firm.

The manufacture of controls and instrumentation in Canada is mainly conducted by branch plants on an import-substitution basis for the domestic market. Control and instrumentation products include such items as fairly large systems that control hydroelectric systems, temperature control sensors for production processes, as well as speed, temperature and weight measurement devices.

In general, extensive foreign ownership is a major characteristic of this sector. Only 20 per cent of electronic firms are foreign-owned, but they account for 55 per cent of the industry's sales. If one excludes Northern Telecom from consideration, foreign-owned firms account for 80 per cent of sales. There are, however, approximately 1500 firms that are Canadian-owned in the larger high-technology industry, which includes the development of software (computer programs), but the Canadian Advanced Technology Association qualified this figure by pointing out that high-tech firms have a high birth and death rate.

Also characterizes this industry is a high volume of intracorporate trade especially by the larger multinational corporations with North American operations (like IBM and Northern Telecom). Independent,

end-user trade tends to be found only with the smaller firms, which are largely Canadian-owned, entrepreneurial and niche-oriented.

Employment in this sector is somewhat atypical. The electronics industry is the largest industrial employer of scientific and technical personnel in Canada. As a partial consequence of this feature, the industry has a high status among regional developers, who see the creation of "technology parks" as being a spur to development and industrial growth. In 1983, the size of the total workforce in electronics was estimated at close to 90,000 people. Half of the employees worked in the telecommunications industry. The remaining 45,000 people were divided almost evenly between the other sub-sectors.

The value of Canadian electronics shipments rose significantly between 1976 and 1981 from \$2.6 billion to \$4.9 billion. In 1981, telecommunications equipment and components shipments collectively accounted for \$2.6 billion or 53 per cent of shipments for the sector.

This industry is highly concentrated in Ontario and Quebec, with collectively house 95 per cent of the sector's operations found in these two provinces. Quebec's strength in electronics has grown over the past decade, with Northern Telecom's well-rooted presence giving the industry a solid foundation. Quebec's area of growth is in the office equipment sub-sector with firms such as AES Data and Micom locating there, and federal support being offered in the form of an office equipment research centre. The core of the electronics sector is, however, located in Ontario.

Trade and Protectionism

The electronics sector is definitely a high volume export-import business, and is one in which Canada is not faring well overall. The trade deficit with the United States rose from a value of \$1.8 billion in 1978 to \$2.7 billion in 1983. However, the increase in the overall trade volume indicates the dynamism of this sector: trade turnover (exports plus imports) rose from \$4.7 billion to \$7.6 billion.

Two sub-sectors have shown an improvement in their trade balance between 1978 and 1983. The telecommunications industry's position moved from a deficit of \$210 million to a surplus of \$77 million while the consumer electronics sub-sector reduced its trade deficit significantly from \$198 million to \$91 million. Both gains were due to combinations of an increase in exports and a decline in the growth rate of imports. The role of Northern Telecom's push into the American market may account for some of the telecommunication subsector's strength; by 1984, its sales to the American Bell operating companies were US \$700 million, which was double the 1983 level.

The other three sub-sectors (electronic components, computers and office machines and equipment, and controls and instrumentation) did not fare as well as the telecommunications and consumer electronic sub-sectors. The electronic components deficit position with the United States rose from \$413 million to \$740 million, a movement that was mainly accounted for by a massive increase in imports from the United

Table 1

Canadian Trade with the United States, 1978 and 1983:
Electronics Sector
 (\$ Canadian thousands)

	Canadian Exports			Canadian Imports			Trade Balance
	1978 ¹	1978 ²	1983	1978 ¹	1978 ²	1983	
ELECTRONICS SECTOR							
Commercial and Telecommunications Industrial Equipment	165,292	261,125	611,244	298,050	470,853	534,322	76,922
Consumer Electronics (TV, radio, stereo)	90,464	142,913	137,315	215,790	340,900	228,086	(90,771)
Electronic Components	144,169	227,755	451,676	405,459	640,536	1,191,566	(739,890)
Computers and Office Machines and Equipment	440,710	696,224	1,071,395	1,026,119	1,621,041	2,910,945	(1,839,550)
Controls and Instrumentation	57,098	90,202	189,732	114,835	181,414	264,907	(75,175)
Total Electronics	897,733	1,418,220	2,461,362	2,060,253	3,254,744	5,129,826	(2,668,464)

Source: Statistics Canada, External Trade Division, Annual, 1984.

1. Current dollars.

2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

States. The computers, office machines and equipment sub-sector experienced the largest downward pull on the trade balance. Its deficit increased from \$925 million to \$1.8 billion. While there was a good improvement in exports to the U.S. in this sub-sector (they nearly doubled), the more than two-to-one proportion of imports to exports remained. Finally, the controls and instrumentations sub-sector's deficit decreased moderately, from \$91 million to \$75 million between 1978 and 1983. Trade turnover in this sub-sector rose significantly however, from \$280 million to \$455 million.

Therefore, the Canada-U.S. trade positions of the electronics industries are neither uniformly weak nor strong. Overall, the sector has increased its deficit by \$832 million while also increasing trade turnover by \$2.9 billion. The sector focusses upon the international movement of its product, and as such, a closer look at the protection afforded to it by both Canada and the United States is warranted.

Calculated tariffs decreased on average for the electronics sector from 13.5 per cent to 7.8 per cent from 1978 to 1983. The high-tariff sub-sectors, namely telecommunications, consumer electronics and electronics components, had tariff rates of 15.3 per cent, 15.0 per cent and 15.2 per cent respectively in 1978, which declined to 12.6 per cent, 12.2 per cent and 12.6 per cent by 1983. The largest drop in tariffs was applied to the computers, office machines and equipment sub-sector, where the level of protection decreased by 6.6 per cent, from 12.2 to 5.5 per cent in this period.

It is interesting to note the increase between 1978 and 1983 in duty-free imports entering Canada from the U.S. The value of electronic components entering duty-free rose significantly from \$186 million to \$840 million (from 45.9 per cent of imports to 70.5 per cent). The value of computers, office machines and equipment that entered without a tariff rose from \$439 million to \$1.24 billion, (which represented a marginal decrease in the proportion of total imports from 43.2 per cent to 42.6 per cent).

Notably, the value of telecommunications equipment that entered duty-free almost doubled. While the increase is by no means as remarkable as the jump in either the electronics components or computer/office machines sub-sectors, it may be indicative of the slight loosening that occurred in Canada's tight regulatory environment for telecommunications, that is, in the terminal attachment interconnect market in Prince Edward Island, Quebec, Ontario, Alberta and British Columbia, in the 1978-1983 period.

Table 3 illustrates comparable Canadian and American tariff levels on common electronics products. It is interesting to note the different treatment that integrated circuits and transistors receive from the two countries. Canada places no tariffs on these two products while the American Most-Favoured-Nation tariff rate (which applies to the Canadian products) is 4.2 per cent. American tariff levels for the products are higher than the Canadian counterparts except in the area of telephonic apparatus. Generally, though, tariffs are comparable. The lower Canadian tariff rate for telephonic apparatus does not convey the entire

Table 2

Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Electronics Sector
(\$ Canadian thousands)

ELECTRONICS SECTOR	(1) Total Imports		(2) Duty Free Imports		(3) Dutiable Value		(4) Duty Collected		(4)-(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Commercial and Industrial Telecommunications Equipment	298,050	534,322	87,067	153,923	210,984	380,400	32,222	47,745	15.3	12.6
Consumer Electronics (TV, radio, stereo)	215,790	228,086	77,395	122,005	138,394	106,081	20,796	12,963	15.0	12.2
Electronic Components	405,459	1,191,566	186,149	840,059	219,310	351,507	33,371	44,210	15.2	12.6
Computers and Office Machines and Equipment	1,016,199	2,910,945	438,987	1,241,338	587,132	1,669,607	71,492	92,663	12.2	5.5
Controls and Instrumentation	114,835	264,907	49,249	119,060	65,586	145,847	7,018	8,986	10.7	6.2
Total Electronics	2,060,253	5,129,826	838,847	2,476,385	1,221,406	2,653,441	164,899	206,567	13.5	7.8

Statistics Canada, External Trade Division, 1984.

Table 3

**Selected Products in the Electronics Sector:
Canadian and United States Tariffs, 1984**

Product	Canadian Tariff	American Tariff
Computers, n.o.p.	3.9%	4.3%
Telephonic apparatus	17.5%	8.5%
Colour TV apparatus n.o.p.	11.4%	15.0%
Integrated circuits	Free	4.2%
Transistors	Free	4.2%
Instrumentations for measurement of natural phenomena (optical)	10.3%	15.6%

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84.

picture, as the tariff level is the least important factor determining the Canadian import market for the American products.

Non-tariff barriers are more important in bilateral telecommunications trade than are tariffs. Two Canadian telephone companies, British Columbia Telephone and Bell Canada, are vertically integrated with equipment suppliers (eg., Microtel and Northern Telecom respectively), and have preferential buying arrangements with them which effectively limit the sales of American manufactures and other domestic Canadian producers (such as Canada Wire and Cable) in the Canadian market. The other provincially-regulated companies also have unique procurement practices. In other sub-sectors of the electronics industry, however, Canada does not have non-tariff barriers.

On the U.S. side deregulation in the telecommunications industry has increased opportunities for foreign producers, including Canadian exporters (see Table 1). Some non-tariff barriers, such as the Buy America Act, small-business set asides and national security restrictions on the release of contract specifications, do apply to this sector. Therefore, Canadian-American trade in the electronics sector is characterized by moderately high but declining tariff levels on both sides of the border, some American non-tariff protection, and an effective Canadian non-tariff trade filter which has resulted from the structure of the Canadian telecommunications industry in which Bell Canada and Northern Telecom have dominant purchaser-supplier roles.

Impact of Free Trade

In this sector, as in many others, a Canada-U.S. free trade arrangement would bring about differential impacts. Some less productive firms might not survive the adjustment process but a significant group of the dynamic, adaptive ones could really prosper. The process of rationalization that could follow the opening of the border may be to the detriment of some Canadian subsidiaries (e.g. in the computer industry which only offers sales and services in Canada).

A major point to consider about freer Canada-U.S. in the telecommunications sub-sector is that vertical integration and supply agreements between telecommunication companies and major equipment suppliers result almost by definition in a restriction of trade in the Canadian market.* For bilateral free trade to exist in this sub-sector, it is thought by DRIE officials that the Canadian regulatory practices that are derived from federal and provincial laws would have to be modified significantly. One possible change could open the Canadian market to the smaller telecommunications equipment firms that must now export their products because they have a restricted Canadian market, as well as to the big multinationals (eg. ITT) which have a small Canadian market share. However a change in Canadian regulatory practice might

* Telecommunications in Canada (Part III, The Impact of Vertical Integration on the Equipment Industry). Report of the Restrictive Trade Practices Commission, Ottawa, 1983, P. 199. One should note the Commission did not recommend major changes, on the grounds that evidence did not exist that competitive bidding, or the separation of telecommunications companies and equipment suppliers, would improve performance in the telecommunications industry.

harm the larger equipment suppliers which rely on a secure Canadian market for "breathing space to engage in expensive product development".*

Freer North American trade would not be the solution to competitive problems that have been experienced by the consumer electronics and electronic components sub-sectors. Their problems originated with the remarkable popularity of Japanese products with Canadian consumers. In response, these sub-sectors have undergone a transformation in that they are relatively smaller, have different production processes and employ fewer people. They could probably manage to make any further adaptations if Canadian-American free trade was introduced.

The effect on labour of a movement toward free trade in electronics is extremely difficult to assess, since labour adjustment is an ongoing phenomenon. This feature was acknowledged by both industry and government. The electronics sector is undergoing a continual labour shift from a high proportion of manufacturing workers towards a high proportion of information specialists (e.g. engineers and computer programmers). One important development that has influenced this transition has been the introduction of computer-aided design and computer-aided manufacturing technologies (CAD/CAM).

In addition to the shift towards knowledge-intensive skills in the industry, one finds that there is a high rate of business formation.

* Telecommunications Report, P. 201.

The implications of this feature is that younger businesses tend not to be unionized, while all of the telephone companies have organized employees. As such, employees in the most highly regulated firms (the over 200 telephone companies operating in Canada) are potentially the most protected from shifts in labour market patterns that could result from a bilateral free trade arrangement. Labour in the innovative manufacturing parts of the sector would be a more likely target if layoffs occur as a result of Canada-U.S. free trade.

Investment patterns, foreign and domestic, in this Canadian sector, may undergo a transformation if free trade is introduced. It is thought by both DRIE and EEMAC that more money would flow south in search of the lucrative American market, but that free trade would also provide a stimulus for firms to keep investment in Canada if they are conducting world product mandate types of operations.

Finally, the regional impacts of a free trade arrangement would be minimal. Business formation would be stimulated, and DRIE speculated that free trade might help a northward flow of business from California's Silicon Valley to British Columbia. In general, however, it is highly unlikely that a firm in the central-Canadian focused high-technology business would relocate willingly to New Brunswick or Newfoundland, with or without free trade.

Therefore, the implications of Canadian-American free trade for this sector are a mixture of hope and pessimism. There will be definite Canadian winners from free trade, mainly firms that have either a world

product mandate, or a North American market niche. The import-substitution-oriented branch plant would do poorly for its raison d'être would cease to exist. Free trade would force such firms to undergo production rationalizations which could mean that Canadian plants might be closed. It is also not clear to what extent free trade would work in Canada's highly-regulated telecommunications environment.

Conclusion

The electronics industry is not united on the topic of Canada-U.S. free trade. The Electrical and Electronics Manufacturers Association of Canada is cautious on this topic; the Canadian Business Equipment Manufacturers' Association (which is mainly composed of large branch plants) favours free trade; and the Canadian Advanced Technology Association's view is that improved market access to the United States would be good but the adjustment costs may be very damaging overall. The idea that bilateral free trade would be the best solution for the electronics sector's economic weak spots does not receive universal endorsement. The size and concentration of major firms in some sub-sectors (e.g. in computers and telecommunications) would make a free trade-related failure of any one of them a serious political concern. The positive aspect of this issue is, however, that the benefits may outweigh the costs--Canada could find itself with a profitable electronics sector with access to a large market and with increased employment in a sector oriented toward research and development.

Appendix

Electronics Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Commercial and Industrial Telecommunications Equipment	634	634
Consumer Electronics (TV, Radio, Stereo)	637	637
Electronic Components	638,639	638,639
Computers and Office Machines and Equipment	771,91947	771
Controls and Instrumentation	702,70919, 70997	702,70919, 70997

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

ELECTRICAL MACHINERY AND EQUIPMENT

The electrical machinery and equipment sector is characterized by its diversity. This diversity makes generalizations vis-à-vis free trade very difficult. Unlike the related electronics sector, the electrical machinery and equipment (or electrical products) sector is generally made up of mature products, suggesting a need to seek out and exploit new markets in order to re-establish growth. Although employment has fallen in recent years (from a peak of 78,268 in 1981 to 70,862 in 1984 - a marked recovery from the trough of 1983), it is still one of Canada's largest manufacturing employers, and therefore of major economic significance.

The Statistics Canada-based definition of the electrical machinery and equipment sector used in this analysis corresponds to that outlined in the recent trade policy review, and in the 1977 IT&C sector analysis. In general terms, it includes the production of equipment required to generate and distribute electricity and the manufacture of products that use electricity. There are six major sub-sectors: industrial electrical equipment (equipment for the generation and transmission of electricity), electrical wire and cable, major household appliances (stoves, refrigerators, etc.), small appliances (toasters, kettles, etc.), and miscellaneous electrical products (including conduits and fittings, lamp bulbs, wiring devices and lighting fixtures), and batteries.

In 1975, according to a study by the then Department of Industry, Trade and Commerce (IT&C), there were 532 electrical manufacturers operating 670 establishments. However, the vast majority of these had under 50 employees. This conclusion is reinforced by statistics from the Electrical and Electronics Manufacturers Association of Canada (EEMAC) which demonstrate that its 210 members account for 80-85 per cent of production and sales in both electrical products and electronics. Its own membership breakdown lists 42 firms with under 50 employees, 119 with 50-500 employees, and another 42 firms with over 500 employees.

The IT&C study and EEMAC also agree that while the majority of firms in the sector are Canadian-owned, the majority of shipments, revenue and employment (60 per cent in 1975 according to IT&C) are accounted for by American-owned firms. One need only think of the industry giants - CGE, Westinghouse, etc. - to informally confirm this conclusion. Intracorporate trade is extensive and increasing, as many of the larger multinationals begin to re-work their production strategies on a continental basis. CGE is the trendsetter in this respect.

Employment, like the industry itself, is generally concentrated in Ontario and Quebec. However, unlike the electronics sector, the older electrical sector has been subject to interprovincial barriers and provincial procurement practices (notably associated with provincial hydro authorities), thereby historically assuring some distribution of labour and industry on a nation-wide basis. The industry is highly

unionized - around 80 per cent (EEMAC figures) - and this figure is unlikely to decline (again according to EEMAC). Labour intensiveness varies widely, but the sector is in general more labour-intensive than electronics. While it can be stated generally that the more labour-intensive sub-sectors are less competitive, there are some very significant exceptions to this generalization - notably, the highly labour-intensive heavy electrical generating equipment industry which produces for customized individual applications, and which has world-class capabilities based on its domestic expertise.

Trade and Protectionism

Table 1 demonstrates that there is extensive Canada-United States trade, and that Canada has a large but generally decreasing trade deficit with the United States in the electrical products sector. Total trade in real terms was quite stagnant over the period in question, reflecting the relatively mature state of the industry. Substantial increases in Canadian exports to the United States (from \$375 million to \$512 million), combined with a decrease in imports from the United States, resulted in a real overall decrease in the trade deficit of \$387 million. However, only in the electrical wire and cable sub-sector did Canada reverse its trade deficit and turn it into a small surplus, although every other sub-sector except batteries recorded a real decrease in its deficit.

Given the relatively mature product development stage of most products in the sector, future industry growth will depend on continued

Table 1
Canadian Trade with the United States, 1978 and 1983:
Electrical Machinery and Equipment Sector*
(\$ Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Industrial Electrical Equipment	165,844	261,997	311,157	878,256	1,387,450	1,279,359	(1,125,453)	(968,202)
Electrical Wire and Cable	27,407	43,297	85,411	46,827	73,976	85,121	(30,679)	290
Major Household Appliances	11,390	17,994	45,315	179,524	283,608	201,786	(265,614)	(156,471)
Small Appliances	7,133	11,269	16,799	172,709	272,842	214,626	(261,573)	(197,827)
Batteries	8,596	13,580	16,408	53,161	83,983	92,671	(70,403)	(76,263)
Misc. Electrical Products	16,837	26,599	37,387	173,028	273,346	253,071	(246,747)	(215,684)
Total Electrical Products Sector	237,207	374,735	512,478	1,503,504	2,375,204	2,126,634	(2,000,469)	(1,614,156)

Statistics Canada, External Trade Division Annual (Raw Customs Basis), 1984.

* EEMAC figures for 1983 differ from those above: they list total exports of \$719 million, total imports of \$2.128 billion, and a trade balance of \$1.409 billion. The difference likely stems from the fact that their totals are based on SIC classifications, whereas those in the table above are based on CITC classifications.

1. Current dollars.
2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

growth in export sales. At the same time, the trend towards reduction of the large trade deficit will have to be continued.

Table 2 shows that tariff protection has decreased from 1 to 4 per cent in every sub-sector of the electrical products sector since 1978, in accordance with the Tokyo Round trend. Nonetheless, tariff protection remains substantial: the lowest tariff on dutiable trade in 1983 was still 12 per cent, applied in the industrial electric equipment sub-sector. Overall, tariff protection decreased from 16 per cent to 13 per cent.

It can be assumed that these substantial tariffs have contributed to the development of vested interests which would oppose decreases in protection. During the last MTN round, Canadian industry representatives stated that they were not opposed to tariff cuts, as long as they could be achieved along with "fair trade", meaning a reduction in NTB's which they felt unfairly handicapped them. Under the circumstances, with most NTB's remaining intact, they opposed cuts. Given the substantial NTB's and the overwhelming size of electrical products industries in the United States, there are elements in the Canadian industry which still feel strongly about the need to retain protection.

Table 3 compares the Canadian and American tariff rates on a number of common items within the electrical products sector. It reveals that Canadian tariffs are generally high, between 12 and 17 per cent, and in all cases considerably higher than American tariffs, which range from

Table 2
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Electrical Machinery and Equipment Sector
(\$ Canadian thousands)

Electrical Products Sector	(1) Total Imports		(2) Free Value		(3) Dutiable Value		(4) Duty Collected		(4) ÷ (3) Tariff (%)
	1978	1983	1978	1983	1978	1983	1978	1983	
Industrial Electrical Equipment	878,256	1,279,359	350,790	639,793	527,465	639,566	82,099	82,561	15.6 12.9
Electrical Wire and Cable	46,827	85,121	8,083	15,590	38,744	69,531	6,392	9,136	16.5 13.1
Major Household Appliances	179,524	201,786	13,504	18,442	166,021	183,344	31,252	31,152	18.8 17.0
Small Appliances	172,709	214,626	22,658	56,043	150,051	158,583	23,310	22,422	15.5 14.1
Batteries	53,161	92,671	23,245	35,360	29,916	57,310	5,222	7,918	17.5 13.8
Miscellaneous Electrical Products	173,028	253,071	80,937	113,206	92,090	139,865	15,038	19,680	16.3 14.1
Total Electrical Products	1,503,504	2,126,634	499,218	878,434	1,004,287	1,248,200	163,313	172,869	16.3 13.8

Statistics Canada, External Trade Division, 1984.

Table 3

Selected Products in the
Electrical Machinery and Equipment Sector:
Canadian and United States Tariffs, 1984

Product	Canadian Tariff	American Tariff
Generators, Thermo-electric converters	12.9%	3.8%
Electrical Cable	12% (single) 12.9% (twisted or braided)	5.3% (insulated) 4.9% (uninsulated)
Domestic Washer/Dryers	17%	10.6%
Refrigerators and Combination Refrigerators-Freezers, Domestic	17%	10.6%
Electric Toasters	17%	6.5%
Electric Kettles	12.9%	6.5%
Electric and Galvanic Batteries	12.9%	6.5%
Electric Lamps and Incandescent Electric Light Lamps	14.6%	4.5%

Revenue Canada, Customs and Excise, Customs Tariff, Departmental
Consolidation, 1984; International Customs Tariff Bureau, International
Customs Journal, United States of America, No. 21 (16th edition),
1983-84.

3.8 to 10.6 per cent. The difference between Canadian and American tariff rates range from 6.4 per cent in domestic washer/dryers, refrigerators, and kettles, to 10.5 per cent in domestic toasters.

The tariff rates of both countries will decrease considerably by 1987 when the Tokyo Round reductions are complete. For example, the Canadian tariff on refrigerators will drop from 17 per cent to 12.5 per cent, while the corresponding American tariff will decrease from 10.6 per cent to 6.8 per cent. On toasters, the Canadian tariff will also fall from 17 per cent to 12.5 per cent and on kettles, it will drop from 12.9 per cent to 10.2 per cent, while the corresponding American tariff will decrease for both items from 6.5 per cent to 5.3 per cent.

At present, some American tariffs - notably on major household appliances - are startlingly high. Regardless of the differential between Canadian and U.S. tariff rates on these items, the American tariff rate is likely to be prohibitive to most foreign competitors, so that both economies are highly protective on such items. However, the pending reductions will make the U.S. economy more open on such items, while the Canadian tariff at 12.5 per cent will continue to constitute a substantial barrier.

In other product areas, the apparent conclusion that the Canadian industry is much more protected than the American industry must be qualified. For example, hydro-electric generators may be protected by higher tariffs in Canada, however, the American industry is in many ways

more thoroughly protected through the non-tariff provisions of the Buy America Act.

Both the Canadian and American markets are comparatively unhindered by non-tariff barriers relative to offshore competitors. They are, according to EEMAC, the most open economies in the Western world. Product standards, which are sometimes purported to constitute NTBs, are not a major barrier in Canada. EEMAC sources say Canada has more offices around the world to assist exporters in meeting Canadian standards than has any other country. There is a high degree of concurrence and ongoing consultation between Canada and the United States regarding product standards.

The most substantial NTBs in Canada are the provincial procurement practices applied particularly to heavy electrical equipment - notably hydro generating equipment. As outlined in the submission to the Commission by Slacan division of Slater Steel Industries, all provinces maintain some trade barriers that give a real financial advantage to companies bidding from within the province on provincially controlled contracts. Since some of the largest provincially-controlled contracts are let by provincial hydro authorities, these trade barriers have had a substantial impact on the structure and distribution of the electrical machinery industry. Ontario, with most of the country's strongest manufacturers located within its borders, has the most liberal procurement policies. It gives a 10 per cent preference to all Canadian-made products. Quebec does not allow contractors whose principal place of business is outside the province to even bid on

provincial government construction contracts. Newfoundland gives a 10 per cent preference to provincial manufacturers. B.C. grants 5 per cent and 10 per cent preferences to local firms in competition with other Canadian firms and in competition with foreign firms, respectively. These barriers are as disruptive to domestic trade as they are to international trade, and they clearly have the potential to become highly politicized.

In the United States, the well-known "Buy America" requirements are applied in some sub-sectors, particularly to capital goods like heavy electrical machinery. These requirements vary, however, they stipulate substantial amounts of American content, and can require final assembly in the United States, or that a foreign bidder underbid an American bidder by a substantial amount. In addition, foreign-owned firms must overcome a stigma attached to their status as "foreigners" in the American market. This is particularly evident in the related electronics sector, where Northern Telecom is a noteworthy example of a firm which has invested heavily in the United States, at least in part to build the image of being a good corporate citizen. This same consideration will apply for most major Canadian-owned firms.

In Canada, there have been improvements to export financing and support programs such as the Program for Export Market Development (PEMD), but EEMAC feels that these still lag far behind the export financing of offshore competitors. In its opinion, such programs must be improved if Canadian electrical industries are to be

internationally competitive. The U.S. has an equivalent number of export support programs.

Impact of Free Trade

As suggested at the outset, the diversity of this sector makes generalizations regarding the potential impacts of free trade virtually impossible. Large, American-owned multinationals which have already begun rationalizing or product mandating on a continental basis would benefit from free trade, as it would further facilitate North American rationalization and therefore facilitate greater economies of scale. American branches which have not begun rationalizing would have little value--and little chance--in a continental market. Many non-American foreign firms--for example, ASEA (Swedish), Northern Engineering (British), and Brown-Boveri (Swiss)--could benefit because they would obtain access to the larger American market via their Canadian subsidiaries. On the other hand, firms in this category which already have American operations might be expected to close their (likely smaller) Canadian branches. The impact on Canadian-owned firms would vary according to sub-sector. In general, regardless of nationality, firms producing relatively customized products like electrical generation equipment (for example, Westinghouse and ASEA) would benefit from the increased market access. Firms producing off-the-shelf items like distribution transformers or cheaper housewares for the Canadian market might well be driven out of business by their American competitors.

In general, free trade would result in considerable attrition among existing firms according to an EEMAC representative and would usher in a period of substantial adjustment for many Canadian and foreign-owned firms - a process which has already begun in response to Tokyo Round tariff cuts. As stated previously, the industry is generally very mature, with little growth potential beyond the exploitation of new market opportunities. Ultimately, then, free trade would be a case of "biting the bullet" in the not-unreasonable hope of long-term increases in efficiency and sales.

Clearly, this period of industrial adjustment would result in a concurrent period of labour adjustment. It is difficult to establish what the aggregate effect of a free trade agreement would be on labour and employment. There is a good chance that even those companies which would benefit in terms of sales and efficiency would experience decreases in numbers employed--this would often be a part of the rationalization process. For example, Westinghouse Canada's 1983 annual report explains its 28% decrease in employment as follows: "This resulted from the divestiture of the lamp business, the general economic downturn and moves designed to create a smaller but better-trained work force capable of handling the new technologies on which greater productivity and quality depend." Similarly, CGE's rationalization program has resulted in a drop in its employment. However, the real decrease in industry employment is difficult to estimate because several CGE plants were sold to other firms as part of the streamlining process, so that jobs at those operations were not in fact lost. Ultimately, total employment in this sector may decrease, however, the decrease will

likely be greater if operations do not modernize and develop the efficiency and capacity necessary to increase exports. It has been suggested that Canadian labour, which has generally lower rates of productivity than its American counterparts could hinder the adaptive process if it insists on wage parity while continuing to lag in productivity.

The industrial and labour adjustment problems in Canada would be complicated by regional/provincial adjustments. Assuming a free trade agreement would entail the dismantling of interprovincial barriers and provincial procurement practices (a requirement if the agreement was expected to yield substantial benefits), a period of national rationalization could be expected according to EEMAC representatives in which uneconomic operations in the peripheries would be wound down and production would generally centralize. This would entail the relocation of both industries and labour. Statistics Canada information indicates that the number of affected employees would not be large in absolute terms. However, it must be remembered that the relative impact would be substantial in the Western and Atlantic provinces because of their much smaller populations. Furthermore, these regions would be particularly sensitive to the loss of manufacturing industries and employment, especially given their traditional resource dependency and, particularly in the Atlantic region, their generally depressed economies. As an example of the kind of a nation-wide distribution which characterizes this industry, it is useful to look at the example of Phillips Cables of Brockville, a British and American-owned firm with 1,350 employees. It operates factories in Dartmouth N.S.; Rimouski, Lachine and St. Jerome,

Quebec; Scarborough and Brockville, Ontario; Portage La Prairie, Manitoba; Sentinel, Alberta; Vancouver, B.C.; and Watertown New York. Under an FTA, it is unlikely that all of these plants would continue to operate.

One key element in assessing whether free trade would result in a net benefit or loss to the country is the question of whether multi-nationals would utilize their Canadian facilities and include Canadian operations in their rationalization plans, or whether an FTA would lead to an exodus of American (and other) operators. It is not clear how these operators would respond to "market forces" in a free trade environment. However, the example of CGE and, the evidence emerging from the rationalization strategies of other MNEs suggest that these large firms are generally making long-term plans with their Canadian facilities targeted for specific product mandates. The adoption of product mandates could yield another important benefit to the country as it would likely bring increased R&D activity to Canada, as MNEs moved R&D related to a given product mandate to the relevant production facility. At present, branch plants which produce full product lines on a small scale for the Canadian market have little or no R&D activity, which is undertaken by the parent in the "home" country.

Conclusion

The electrical products sector is divided on the issue of free trade as one would expect given its diversity. This is reflected in EEMAC's activity as it has been unable to come out for or against free

trade, but is organizing seminars to acquaint its membership with the issues. Large, American-owned multinationals are likely to follow CGE's lead in favouring free trade, in order to facilitate North American product mandating. Manufacturers of heavy electrical generating equipment may also favour free trade (meaning particularly the removal of NTBs) as a means of expanding the small, specialized market for their world-class products. Otherwise, the sector will probably divide between those firms which have specialized products, and those which manufacture off-the-shelf, long production-run products. The former would likely favour free trade and the latter generally oppose it. Producers of off-the-shelf products would simply stand little chance of surviving in competition with their much larger American competitors.

A complicating factor, and the major political obstacle to free trade, stems from the fact that interprovincial obstacles and provincial procurement practices have resulted in a nation-wide distribution of small-scale electrical manufacturing plants, particularly in products for provincial hydro authorities. Should provincial barriers be removed under free trade, the result would likely be national rationalization and the closing of many smaller regional operations. Such a process would incite opposition not only from those operations but very likely from provincial governments, labour unions and other regional constituencies.

Thus, those who favour free trade in this sector face two important tasks. First, they must demonstrate that there would be significant economic benefits which would more than compensate for the adjustment

costs associated with free trade. And second, they must address the regional issue: what would be the production and employment loss in peripheral regions in the electrical products sector? What could replace this production and employment? Or, alternatively, how could the necessary labour adjustments be facilitated and justified? All interests must deal with the question of what future the sector faces if it does not secure access to larger markets, and does not increase its international competitiveness.

Appendix

Electrical Machinery and Equipment
Sector Definition by Canadian International Trade
Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Industrial Electrical Equipment	503,50440-50499, 52345,65519, 65554-65599,683-689	503,50440-50499, 52345,65570, 65599,683,684,688, 689
Electrical Wire and Cable	46973-46975	46975
Major Household Appliances	65506,65528-65549, 661,698	65506-65549, 661,698
Small Appliances	692,697	692,697
Batteries	693	693
Misc. Electrical Products	495,68147-68187, 68199,682	495,682

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

SCIENTIFIC AND MEDICAL EQUIPMENT AND PRODUCTS

Description

Scientific and medical equipment and products is not a high profile industrial sector in Canada, and is to some extent a catch-all category. However, it is characterized by a relatively high value of trade and a large trade deficit, which make it worthy of further investigation. The best source we have on which to base this analysis besides our Statistics Canada data is an interview with a senior official at the Canadian Association of Manufacturers of Medical Devices (CAMMD). Hence, the focus of this write-up will be on the medical devices industry.

With this focus in mind, it should be noted that there are some differences between our sector definition and the CAMMD definition. A considerable portion of the products in our scientific instruments sub-sector would not be included among medical devices products, although some of the laboratory equipment in this sub-sector would be produced by CAMMD members. Dental supplies and optical equipment are not included in the medical devices industry, however, these are relatively low-trade categories. In general, medical devices are defined by the government as "anything used for the external or internal care of the patient", with anything staying in the body over 30 days requiring special approval. The industry does not make sub-category distinctions, probably in large measure because many firms produce a very wide range of medical devices.

The outstanding characteristic of the medical equipment industry is that 85 per cent of sales in Canada are imported. CAMMD is endeavouring to increase the strength and sales of the domestic industry, but faces an uphill struggle: producers cannot achieve sufficient sales volumes, cannot get sufficient R&D funding, and have higher labour costs in Canada. The industry is made up of a large number of firms - about 300 either directly or peripherally involved in medical devices - with the great majority having less than 50 employees. Most of these firms, and certainly all of the largest ones, are foreign (mainly American) owned. Although Canadian tariffs are relatively high where they apply, a large volume of imported products in this sector enter duty-free, so that the activity of firms in Canada is generally limited to warehousing and the production of a few wide distribution items (the most recognizable example is band-aids, although this example understates the complexity and value of Canadian production). More expensive and complex medical devices can be manufactured in sufficiently greater volumes in the U.S. to effectively make most production in Canada uneconomic. According to the CAMMD, the larger American-owned firms are in fact disinvesting wherever possible.

Obviously, there is considerable intracorporate trade in this sector. There is also a small amount of product mandating. However, the general impression received from CAMMD is that foreign-owned firms do not wish to make a substantial commitment to this country. Canadian firms are small and, without more R&D funding, find it very difficult to develop and market their products south of the border. Furthermore,

whereas most medical goods enter Canada duty-free, those entering the U.S. generally face substantial (or at least aggravating) tariffs.

The industry is centered in central Canada, with 75 per cent of firms located in Ontario and most of the remainder in Quebec. There are also pockets of activity in B.C. and Manitoba. Regional labour distribution corresponds to the distribution of firms cited above. The total labour force in the medical devices sector is about 5,000, and it is close to 75 per cent unionized. CAMMD member firms have been faced with several serious strikes recently.

Trade and Protectionism

Table 1 details Canadian trade with the United States for both 1978 and 1983. It clearly demonstrates our import-dependence in this sector: in every sub-sector Canada has a very substantial trade deficit with the United States. Proportionately, Canadian exports in the scientific instruments, equipment and parts sub-sector are only 26.6 per cent of imports, while exports in the health sciences equipment sub-sector are relatively even smaller - 17.7 per cent of imports. The sizeable trade deficit will be difficult to turn around and we are likely to remain highly import-dependent in this sector. The question is whether anything can be done to begin narrowing the export-import gap.

Table 2 illustrates the level of tariff protection for each sub-sector. Once again, the table lends itself readily to

Table 1
Canadian Trade with the United States, 1978 and 1983:
Scientific & Medical Equipment and Products Sector
(\$Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	1978 ¹	1978 ²	1983	1978 ¹	1978 ²	1983	1978 ²	1983
Scientific Instruments Equipment & Parts Sub-Sector	78,247	123,613	167,023	340,648	538,149	627,396	(414,536)	(460,373)
Surgical & Medical Supplies (includes veterinary and hospital)	38,548	60,897	100,523	264,249	417,455	582,667	(356,558)	(482,144)
Dental Supplies	2,327	3,676	4,998	21,076	33,295	36,447	(29,619)	(31,449)
Optical Supplies	1,584	2,502	6,225	16,072	25,390	30,326	(22,888)	(24,101)
Other Health Sciences Supplies	3,627	5,730	15,610	44,232	69,877	69,274	(64,147)	(53,664)
Health Sciences Equipment Sub-sector	46,086	72,806	127,356	345,629	546,017	718,714	(473,211)	(591,358)
Sector Total	124,333	196,419	294,379	686,278	1,084,168	1,346,109	(887,749)	(1,051,731)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars

nt

2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

Table 2
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Scientific & Medical Equipment and Products Sector
(\$Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4)÷(3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Scientific Instruments Equipment & Parts Sub-Sector	340,648	627,396	173,904	296,787	166,745	330,608	21,509	29,452	12.9	8.9
Surgical & Medical Supplies (includes veterinary and hospital)	264,249	582,667	238,250	508,500	25,999	74,167	4,266	10,674	16.4	14.4
Dental Supplies	21,076	36,447	15,323	19,816	5,754	16,631	867	1,656	15.1	10.0
Optical Supplies	16,072	30,326	7,560	12,834	8,512	17,492	901	1,269	10.6	7.3
Other Health Sciences Supplies	44,232	69,274	14,423	30,537	29,809	38,737	3,810	4,919	12.8	12.7
Health Sciences Equipment Sub-Sector	345,629	718,714	275,555	571,687	70,074	147,027	9,844	18,519	14.1	12.6
Sector Total	686,278	1,346,109	449,459	868,474	236,819	477,635	31,353	47,970	13.2	10.0

Statistics Canada, External Trade Division, 1984.

generalization: Canadian tariffs in each sub-sector are high. They range from a low of 8.9 per cent in the scientific instruments, equipment and parts sub-sector to a high of 14.4 per cent in surgical and medical supplies. In the view of the medical devices industry, protection is even more substantial: many of the products in the scientific instruments sub-sector do not come within the purview of CAMMD, while the next two lowest tariff categories - dental supplies and optical equipment - are not considered by CAMMD to be part of the medical devices industry. Thus, CAMMD estimates that average tariffs on dutiable products within its industry are 13-14 per cent.

However, it is also generally the case that a high proportion of imports in this sector enter duty-free. The percentage of duty-free imports is highest in the surgical and medical supplies category, where only 14.6 per cent of imports are dutied. Overall, only 25.7 per cent of imports in this sector are subject to duty. A small number of Canadian manufacturers are protected: for example, producers of diagnostic and anabolic chemicals have received between 7 per cent and 13.5 per cent protection since 1981, and have increased sales and production in this period. However, discussions with sources in the industry reveal that many producers in Canada do not receive tariff protection, while facing duty costs to enter the American market. Virtually all Canadian hospital goods can be brought in duty-free from the United States. The result, according to the tariff department at the Canadian Manufacturers' Association, is that many hospitals pursue an effective "don't buy Canadian" policy because they prefer the convenience and economies of purchasing most of their requirements from

a single source -- a convenience which only the largest American producers are capable of providing. Thus, the industry in Canada is relatively highly exposed and hard pressed to achieve economic levels of sales.

Table 3 supports this conclusion. Whereas many products come in free on the Canadian side, particularly in the medical/surgical area, all products listed are subject to duty on the U.S. side, ranging from 5 per cent for plastic dentures to a phenomenal 31.2 per cent for clinical thermometers. In Canada, it is interesting to note that whereas clinical thermometers come in duty-free, household thermometers are subject to 10.3 per cent duty. This contrast implies a policy decision to bring in most medical-related products free of charge. In addition to those items which are formally duty free, Canada allows a doctor to import any item free of duty without government approval if it is for use by a specific patient.

Both countries engage in government procurement and other practices on an informal basis. In Canada, these practices are often ignored in favour of the advantages of single sourcing most requirements from large American firms; in the U.S., it was estimated that governments source close to 100 per cent of their purchases domestically. Both countries have very strict, though compatible, product standards. However, these are exclusively safety measures and are not considered to be NTB's.

In terms of other trade-related government activity in Canada, the CIDC provides some funding for specific projects at specific locations -

Table 3

**Selected Products in the Scientific and
Medical Equipment and Products Sector:
Canadian and United States Tariffs, 1984**

Product	Canadian Tariff	American Tariff
Clinical thermometers	free	28.3%
household thermometers	10.3%	13.1%
artificial limbs	free	7.4%
Stethoscopes	free	7.6%
Electrocardiographs	free	4.9%
Dentures	12.9%	5% (plastic) 14.1% (other)
Shapes of glass or plastic for use in manufacture of spectacles	12.5%	10.1%
Hearing aids	free	4.9%

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84.

for example, the Connaught Laboratories in Toronto - and the Export Development Corporation (EDC) provides some funding on the same basis. However, there are no on-going government support programs, and the industry feels its prospects are severely damaged by the lack of substantial R&D support.

Impact of Free Trade

In general, most Canadian interests in both industry and government would be favourable towards free trade. Such an initiative would likely hasten disinvestment by some American-owned firms. However, it would give Canadian firms improved market access in the U.S., and the potential to achieve economical volumes of production with lower costs which are very difficult and often impossible to obtain within Canada. For example, one Canadian firm, Madson Electronics, makes only 8 per cent of its sales in this country, and could not survive without the American market. It must simply accept the 4.9 per cent American duty as part of the price of economic viability. From the government point of view, the major advantage of a tariff-free environment on medical goods is to facilitate a reduction, however small, in the huge, often debilitating costs of government-run medical services.

At first, the disinvestment which would almost certainly follow from a free trade agreement would result in a drop in employment, and thus would lead to labour adjustment difficulties. However, employment at 5,000 people is not great by manufacturing standards at present. Regional impact would be limited to central Canada where the industry is

concentrated. The most important question is whether Canadian interests would be able to take advantage of the expanded opportunities afforded under free trade through expanded access to the American market. If so, the long-term result would be a more soundly-based Canadian industry and increased employment. The Canadian industry would have to overcome some disadvantages resulting from higher labour costs. However, the CAMMD feels that Canadian companies could compete with the right products. Consequently, the key issue is the availability of sufficient R&D support.

CAMMD feels that Canadians have the ideas: both individuals and laboratories in Canada are coming up with marketable ideas regularly. With access to the U.S. market and development support, these products could carve out a North American market niche from a Canadian base. However at present, Canadian firms and individuals with product ideas approach U.S. firms to get their products fully developed and to have them manufactured in the U.S. under licence, to capitalize on the lucrative U.S. market.

Thus, free trade would be useful in reducing government health expenditures and in further opening the U.S. market to Canadian firms, in spite of the MNE disinvestment it would lead to. However, Canadian firms would be unable to take advantage of the opportunities afforded by free trade in this high tech field without much improved R&D support, which would allow them to develop specialized products and carve out continental market niches. Without enhanced support, Canadians with

ideas will continue to take them south of the border where large firms have large R&D budgets and are always open to new product opportunities.

Conclusion

The Canadian scientific and medical equipment products sector is noteworthy for the small share of the Canadian market it possesses: 85 per cent of product sales in this sector are imported. Many of the firms in the sector are large, foreign-owned enterprises which limit their Canadian activities to warehousing and the production of a small number of items. The vast majority (nearly 75 per cent) of imports in this sector are duty free, while U.S. tariffs are much more extensive and, like those which do exist in Canada, are high. Thus, U.S. multinationals have no reason to increase their commitment to Canada and are, in fact, already disinvesting to a limited extent.

In spite of the weakness of the Canadian industry, neither industry nor government favour protection. On the contrary, both are on the whole favourably disposed to free trade. Both recognize the necessity of keeping the high costs of health care as low as possible. Industry recognizes that it is impossible to achieve economic volumes of production if producing only for the Canadian market. And there is a recognition that a strong medical equipment industry cannot be built on a foundation of MNE's with a very limited commitment to Canadian corporate citizenship.

The best prospects for a vital scientific and medical devices industry in Canada lie in the development by Canadians of products to fill specialized niches in the North American market, which would allow them adequate volumes of production. Thus, free trade would be in their interest. The product ideas are apparently forthcoming from individual Canadians and laboratories. The major gap in the process is the provision of adequate R&D funding to facilitate the development of specialized products in Canada. This will necessitate more active government support for R&D. Whether government will offer this support, and whether it is compatible with an emphasis on free trade, are essential questions in this sector.

Appendix

Scientific and Medical Equipment and Products
Sector Definition by Canadian International Trade
Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Scientific Instruments, Equipment and Parts	703,705,708, 70949-70995,70999	703,70949, 70994,70999
Surgical and Medical Supplies (includes veterinary and hospital)	706,70909,881	706,70909,881
Dental Supplies	882	882
Optical Supplies	707	707
Other Health Sciences Supplies	883-885	883,885

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

FURNITURE

Description

The furniture industry is one of the more traditional manufacturing industries in Canada. Although it has diversified, its output has remained a small part of the national product. There are several ways of looking at the composition of the furniture sector. The method chosen here, using Statistics Canada data, views the sector as being composed of household furniture, office furniture and fixtures, miscellaneous furniture (usually institutional furniture) and electric lamps and shades. This definition met with general approval from both government and industry with a minor exception. The government official that was interviewed noted that little emphasis is placed upon the electric lamp and shade manufacturing component, because it is concerned mainly with assembly. There is limited related production, employment or trade in Canada. Industry representatives divided the sector into three categories, omitting the lamp and shade component entirely. In fact, this sub-sector is not listed in industry-generated statistics.

The furniture industry in Canada is highly fragmented and specialized, and is noted for its small start-up costs. The growth rate over the past few years has been slow (1.5 to 2 per cent). The enterprises tend to be single-plant, family-owned operations - a characteristic that is shared by both Canadian and American firms. Plants also have a tendency to be located close to their final markets

because (a) it is costly to ship finished furniture; and (b) there is a link between the distance the article is shipped and the amount of damage that the article sustains. Major manufacturers in Ontario and Quebec, however, do supply markets in Western Canada including British Columbia and Alberta as well as exporting to markets principally in the United States.

The major industry in the sector is the manufacture of household furniture. It accounts for 50 per cent of domestic production. The miscellaneous furniture industry claims 30 per cent, while the office furniture sub-sector produces 20 per cent of the total.

The total labour force in the industry consists of approximately 50,000 employees. There are 25,000 people who manufacture household furniture, 8,000 employed by the office furniture industry, 1,500 employed to manufacture lamps and shades, and 15,000 employees involved in the manufacture of miscellaneous furniture.

Furniture industry employment, 85 to 90 per cent, is concentrated in Ontario and Quebec. Most of the remainder is to be found in the Western provinces.

The industry's labour force is partially unionized. Companies that are located in urban areas have a unionization rate of at least 50 per cent, whereas the small-town firms tend to be family-run operations without an organized work force.

The production processes in the furniture sector are highly labour-intensive, which increases the tendency for the industry to be fragmented into a large number of small establishments. The majority of firms employ fewer than twenty people. DRIE has noted, however, that 16 per cent of the largest firms, those employing over 50 employees, account for 70 per cent of all shipments.

Trade and Protectionism

The following tables present the Canadian furniture industry's trade with the United States, the level of protection applied by Canada to American furniture, and comparable Canadian and American tariff levels on common furniture products.

In general, the furniture industry has more than doubled the value of exports to the United States from 1978 to 1983, moving from exports of nearly \$180 million in 1978 to slightly more than \$378 million in 1983. Imports of furniture from the United States dropped in this period from \$289 million to \$188 million. Consequently, the industry shifted from a bilateral trade deficit of nearly \$109 million to a surplus of \$185 million in these six years.

The improvement in the trade balance for furniture has been generated principally by the office and miscellaneous sub-sectors, and to a lesser degree, by the household furniture industry. Exports of household furniture to the United States more than doubled from \$32 million in 1978 to \$84 million in 1983, while in the same period,

Table 1
Canadian Trade with the United States, 1978 and 1983:
Furniture Sector
(\$Canadian thousands)

Sub-Sector	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Household	20,240	31,974	83,510	121,306	191,637	117,558	(159,663)	(34,048)
Miscellaneous	38,408	60,676	79,846	26,487	41,844	31,255	18,832	48,591
Office	47,357	74,814	195,393	16,430	25,956	22,146	48,858	173,247
Electric Lamps and Shades	7,842	12,389	14,376	18,383	29,041	17,170	(16,652)	(2,794)
Total Furniture	113,846	179,852	373,126	182,606	288,477	188,130	(108,625)	184,096

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1. Current dollars
2. Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

American imports to Canada decreased from \$192 million to \$117 million. As a result of these developments, Canada's trade deficit in this sub-sector was reduced significantly from a 1978 value of \$159 million to a 1983 figure of \$34 million.

The office furniture industry in Canada has also had success in the U.S. export market. Exports of office furniture rose from \$75 million in 1978 to \$195 million in 1983, while imports declined only slightly from \$26 million to \$22 million. Consequently, the 1978 trade surplus in office furniture with the United States of \$49 million had increased by 1983 to \$173 million.

Thus, there have been some fairly strong export performances during the past decade. The industry attributes its current export successes to the presence of a lower-valued Canadian dollar, which shifts the terms of trade with the United States in Canada's favour, rather than to either a superior product or more efficient production than the American manufacturers. In fact, they argue that if the value of the Canadian dollar rose closer to that of the American dollar, much of the industry's current advantage would vanish.

While the value of imported furniture from the United States has decreased marginally, it has not been as a result of higher levels of Canadian protection. In fact, the level of tariff protection on American furniture entering Canada has decreased from 1978 to 1983, moving from 19.0 per cent to 16.2 per cent on dutiable furniture. In 1978, less than 2 per cent of furniture from the United States entered

duty-free, and in 1983, slightly more than 2 per cent entered in this fashion.

The levels of tariffs on American-made furniture have decreased between 1978 and 1983 for all categories: household furniture tariffs fell from 19.2 to 16.8 per cent; miscellaneous furniture tariffs were reduced from 17.7 to 14.7 per cent; office furniture protection was diminished from 17.8 to 15.4 per cent; while the duty on electrical lamps and shades was cut from 19.3 to 15.3 per cent.

It is interesting to compare Canadian and American protection on specific articles of furniture. Canadian tariff levels tend to be significantly higher than the American levels. The protection granted to a wood table serves as an excellent illustration of this point. The Canadian tariff rate (MFN) for an American wood table is 16.9 per cent, while the American rate for the comparable Canadian item is considerably lower at 3.4 per cent. Other examples illustrate the wide variance between the Canadian and American rates. The Canadian tariff for an American metal filing cabinet (14.4 per cent) is more than double the relevant American tariff (6.3 per cent). Canadian electric lamps are well-protected by a Canadian tariff of 14.6 per cent, while the American rate is dramatically lower at 3.1 per cent.

However, for some articles of furniture the tariff levels are more comparable. The Canadian tariff on a fabric-covered sofa is 16.9 per cent, while the American rate is moderately lower at 10.9 per cent. In general, however, Canadian protection is significantly higher than

Table 2

Canadian Imports from the United States and Tariff Protection, 1978 and 1983:
Furniture Sector
(\$Canadian thousands)

Furniture Sub-sector	(1)		(2)		(3)		(4)		(4)-(3)	
	Total Imports 1978	1983	Free Value 1978	1983	Dutiable Value 1978	1983	Duty Collected 1978	1983	Tariff % 1978	1983
Household	121,306	117,558	1,830	916	119,476	116,642	23,134	19,641	19.4	16.8
Miscellaneous	26,487	31,255	886	1,830	25,600	29,426	4,534	4,334	17.7	14.7
Office	16,430	22,146	384	1,554	16,047	20,592	2,853	3,166	17.8	15.4
Electrical Lamps and Shades	18,383	17,170	366	272	18,017	16,898	3,469	2,590	19.3	15.3
Total Furniture	182,606	188,130	3,466	4,572	179,140	183,558	33,990	29,731	19.0	16.2

Statistics Canada: External Trade Division, 1984.

Table 3

**Selected Products in the Furniture Sector:
Canadian and United States Tariffs, 1984**

Product	Canadian Tariff	American Tariff
Wood table	16.9	3.4
Fabric-covered Sofa	16.9	10.9
Metal Filing Cabinet	14.4	6.3
Hospital Operating Table	12.8	6.5
Electric Lamp	14.6	3.1

Revenue Canada, Customs & Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal 1983-84, United States of America, No. 21 (16th edition), 1983-84.

American protection for furniture, and will remain so after 1987. In that year, the wood table will have a Canadian tariff of 15.0 per cent and an American tariff of 2.5 per cent. Therefore, while tariff reductions are occurring consistently according to the GATT, the Canadian furniture manufacturers have, and will continue to have, a significant tariff advantage over American manufacturers for both the domestic and export markets.

There are few non-tariff barriers to trade between Canada and the United States in this industry. Consequently, this is not an area of major concern. Ones that should be mentioned are the powerful Buy America Act and the domestic procurement practices of the Canadian federal and provincial governments. Both the Canadian and American governments are significant purchasers of furniture. The miscellaneous furniture category, in particular, enjoys the benefit of preferential government procurement policies which are accepted both in their nature and scope by the furniture manufacturers. There are domestic safety standards which apply to electric lamps and shades. Beyond these two examples, however, there appear to be few NTBs to trade.

The Canadian government is quite actively involved in this sector, however. The federal and provincial governments have extended significant financial support for the manufacture and export of furniture.

The federal government offers assistance through both the Enterprise Development Program (EDP) and the Regional Development

Incentive Program (RDIP), which are general programs for Canadian manufacturers. Furniture manufacturers make very good use of them. Through the Department of External Affairs, the Canadian government offers export marketing assistance with its Program for Export Market Development (PEMD). It also offers duty draw-back provisions which reduce the input cost of imported materials used in furniture destined for export markets.

The government of Quebec provides considerable assistance to the furniture industry. It has a multi-faceted program, Innovation Meuble. It provides funding for industry specialists, marketing improvements, product innovation and equipment improvements. Also undertaken are analyses of the operations of specific companies. The Société de développement industriel (SDI) provides loans to furniture manufacturers. For external marketing, the Quebec government operates APEX, which is similar in function to the federal government's PEMD.

The governments of Ontario, British Columbia and Alberta also offer export assistance programs, but without the high profile of the Quebec example.

In the U.S. there appears to be very little government assistance to the furniture industry beyond the usual preferential purchasing policies.

Impact of Free Trade

The impact of free trade with the United States upon the furniture industry would be neither uniform nor one-dimensional. The impact upon the household furniture sub-sector would be harsher than upon the office furniture sub-sector in the areas of productivity, competitiveness, labour market structure and, to a lesser extent, investment patterns. Free trade would also have a differential impact upon the regional distribution of firms and employment.

Overall, the Canadian firms in the household furniture business would need to make some structural adjustments before they could hope to reap production benefits from sectoral free trade. Their marketing strategies would require reorientation from the smaller domestic consumer base to the larger and more competitive North American market.

The office furniture sub-sector would have relatively few adjustments to make, since over 50 per cent of production is now exported and 95 per cent of exports are to the U.S. market. Increased production schedules required by a larger market would not appear to be a significant challenge to this sub-sector.

The impact of free trade upon the furniture industry's competitiveness is difficult to assess. The Canadian industry is already experiencing competition in the household furniture sub-sector from Asian furniture producers. Efficient plants operate in Taiwan,

Singapore, Malaysia and South Korea which build and finish furniture components and ship them to Canada for assembly. They have successfully copied North American styles. Their products are very competitive and relatively attractive to consumers. The largest concentration of furniture production in the world (70 per cent of American wooden furniture production) is in North Carolina, Virginia and Tennessee. There are ten giant firms and five of them produce more than the entire Canadian household furnishing industry. The prospect of lowering the Canada-United States tariff walls to these firms intimidates Canadian producers, who believe they would find themselves at a competitive disadvantage.

In general Canadian household furniture firms are in a particularly vulnerable position. As relatively fragmented, single-plant operations they are in a poor position either to diversify, to expand marketing networks or to finance higher transportation costs.

The larger firms in this sub-sector would probably be in a better position to compete in a free-trade situation with the United States. Bauhaus in Toronto is an example of a firm which has developed on a multi-establishment basis, and which now exports a very substantial proportion of its production. Some other firms, with production oriented towards the high-income, luxury market, export the majority of their production.

The office furniture sub-sector would have fewer adjustment problems in "meeting the competition" in a North American free trade

market. Since many of the firms are already oriented to this market despite the current levels of tariffs, and since many of the American-controlled firms already have significant design and development capabilities, the elimination of tariffs would be less of a problem. In general, however, the furniture industry would likely face major adjustments if free trade with the United States was introduced.

It is difficult to speak of productivity or competitive adjustments without considering the effect that free trade would have upon employment and the Canadian labour market. Industry representatives estimate that up to 10,000 jobs could be lost as some of the smaller firms closed. It was considered difficult to assess the role that organized labour could play in an adjustment to free trade in this sector. However, there are political implications of such a large labour displacement.

Although some industry spokesmen believe that the overall level of investment in the furniture industry might decrease with the introduction of free trade due to lower profitability of Canadian production, it is by no means certain that the nature of investment would alter significantly. The opportunity to compete in a much larger market could improve productivity and profitability for efficient companies. Since very little of the Canadian household furniture industry is foreign-owned, there would be virtually no possibility of relative foreign disinvestment as a consequence of free trade. Similarly, there is almost no investment by Canadians in the United States given the local market orientation of Canadian firms. In

the office furniture sub-sector levels of American ownership are higher, yet since it would be relatively more competitive under a free trade arrangement than the household sub-sector, major foreign investment or divestment is not anticipated by DRIE representatives. However, some subsidiaries that produce office furniture for the Canadian market might close. As such, foreign investment adjustments that would result from free trade are not as important as the productivity, competitiveness or labour adjustment problems.

Finally, it is important to assess the varying impact sectoral free trade would have upon Canada's regions or provinces. Between 85 to 90 per cent of production is currently located in Ontario and Quebec. It is anticipated by DRIE that Ontario producers might adjust better than their Quebec counterparts as they have tended to be generally better-financed, better managed, more export-oriented and more conscious of cost structures. They also tend to have larger furniture operations than the Quebec manufacturers.

The western household furniture industry, which makes up most of the remainder of production, is located largely in Manitoba and Alberta. Although as relatively new operations western firms may be better able to adjust, their potential competitiveness in an open North American market is uncertain. Some have limited distribution markets while others are now exporting quite successfully. The Western producers, as a group, do not seem to be strongly opposed to free trade in principle and are more concerned with issues of social and economic

policy concurrence with the United States if such an arrangement emerges.

Conclusion

There are two general considerations when examining the consequences of Canada-United States sectoral free trade in furniture. First, the sector is fairly unified in its disapproval of free trade with the household furniture industry as an especially outspoken opponent. It sees a move toward sectoral free trade as a "non-starter" because there are no anticipated advantages to be secured for itself. If general Canada-United States free trade was introduced, it maintains that its interests would be overlooked or sacrificed because it is such a small economic actor.

The second consideration is the political viability of sectoral free trade for the furniture industry. Again, the major problem lies with the household furniture industry, where both the management practices and technological applications are slow to change. The high labour intensity means that when the industry is doing well, it is a good employer. If free trade is introduced, the industry feels that it will not be able to compete effectively. Subsequently, it is maintained, many jobs could be lost - many of them in one-industry towns - a situation which could have serious political repercussions.

Therefore, the furniture sector, and especially the household furniture industry, does not favour sectoral free trade; in fact, it sees itself as being a bit of an economic loser if such a strategy is pursued.

Appendix

Furniture Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Household Furniture	74012-74029, 74072-74099	74009-74019
Miscellaneous Furniture	74032-74071	74039, 74099
Office Furniture	74029	74023, 74029
Electric Lamps and Shades	68119, 68193, 68143, 68191	681

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

MISCELLANEOUS CONSUMER PRODUCTS

Description

In addition to the sectors described in the preceding sections, a considerable amount of Canadian trade takes place in a variety of "miscellaneous sub-sectors", some of which are very large. This trade is accounted for statistically in Tables 3 through 8 at the end of this chapter describing "other end products", "consumer products", and "sundry crude materials and fabricated materials" respectively. Some of the more prominent and trade-relevant industries within these general categories are analyzed below.

Hardware and Housewares

The Canadian hardware and housewares industry is in most respects a very typical Canadian manufacturing industry. It is also a fairly significant one, accounting for employment of approximately 30,500 workers, generally unionized, and having a market size estimated at \$2,588,750,000.* It is a very diverse industry, including manufacturers of basically all products found on the shelves of a hardware store (not to mention department store, catalogue store, and automotive hardware store). Thus it covers producers of tools, hardware, housewares, lawn, garden and leisure equipment. It is represented by the Canadian

* Canadian Hardware and Housewares Manufacturers Association Brief to the Commission.

Hardware and Housewares Manufacturers Association (CHHMA), whose 270 members include many enterprises which belong to other trade associations as well. In terms of our Statistics Canada sector breakdowns, it includes a number of different sub-categories, such as: bolts, nuts, screws and basic hardware from the metals and minerals sector; tools, home and garden equipment from "other end products"; some of the plumbing supplies from "other end products"; and some of the cleaning equipment from the "consumer products" sector.

Firm sizes vary widely, and range from large branches of foreign-owned multinationals (mainly American, but also some British) to small, usually Canadian-owned firms. Overall, there is substantial foreign ownership, particularly in the hardware sub-sector, where CHHMA estimates that more than half of the firms operating in Canada are American-owned. The CHHMA states in its brief to the Commission that the degree of foreign ownership can be a problem in promoting export trade, since some foreign-owned subsidiaries are inhibited from exporting by a lack of managerial or marketing strength, a prohibition from competing against the parent company or a subsidiary from the same corporate family, or an inability to compete against foreign firms which operate under more favourable tax regimes. There is an increasing trend towards product mandating and intracorporate trade which the CHHMA favours, particularly among the larger multinationals (for example, Black & Decker), however, the practice is not very widespread. In general, due to the high degree of American ownership in the industry, it does not see its main competition as coming from American firms, but rather from offshore competitors, particularly in Asian NIC's where

there is less regulation and lower labour costs. Like most secondary manufacturing industries, it is centred in Ontario and Quebec.

A quick glance at the sub-sectors cited above (see Tables 2 & 5) reveals that the Canadian industry as a whole runs a substantial trade deficit with the U.S. In the handtools and garden equipment sub-sector, for example, Canada's deficit in 1983 was \$254 million. Similarly, the industry is quite highly protected: in the same sub-sector, average tariffs in 1983 were 12.6 per cent (see Table 4).

Table 1 compares the level of Canadian and U.S tariffs on some typical hardware and housewares items. It clearly demonstrates not only that Canadian tariffs are high - from 11.4 per cent to 17.5 per cent for this sample - but also that they are from 6 per cent to 14 per cent higher than U.S. tariffs. Thus, the hardware and housewares industry constitutes a classic example of secondary manufacturing in Canada, having grown up because of, and protected by a high tariff wall, with all the concomitant ramifications: a high degree of foreign ownership for one, and the need to become more internationally competitive (stressed in the CHHMA brief) for another.

There are no major non-tariff barriers in North America. Product standards can be viewed as NTB's, but Canadian standards are compatible with those in the U.S. In terms of other government trade-related activities, the CHHMA has been making a concerted effort to promote increased export activity among its membership for the past several years, and has therefore encouraged the utilization of federal PEMD

Table 1

Selected Products in the
Hardware and Housewares Sub-Sector,
Canadian and United States Tariffs, 1984

Product	Canadian Tariff	American Tariff
Hammer	14.6%	8.0% ad. val. (heads not over 3.25 lbs.)
Screwdriver	14.6%	8.0% ad. val.
Electric drill	11.4%	3.4% ad. val.
Nuts & bolts	14.8%	0.7% ad. val. (iron or steel)
Power lawn mowers	12.9%	6.3% ad. val.
Shovels & spades	11.4%	4.7% ad. val.
Rakes	11.4%	4.7% ad. val.
Brooms	17.5%	2% ad. val.
Aluminum kitchen or household hollow-ware	12.9%	6.1% (cost) 6.3% (other)
Plastic housewares	15%	\$.03 per lb.

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21 (16th edition), 1983-84.

(Program for Export Market Development) grants. Although the industry has increased its exports in recent years, it does not feel it is exporting as much as it should, and suggests in its brief that the use of tax incentives might be more effective than grants and loans in encouraging more exporting by Canadian firms.

It is difficult to generalize regarding the impact of free trade on this industry, given its diversity. However the industry seems fairly receptive to the trend towards freer trade. As suggested above, the impact of free trade would be mixed. The larger firms, and particularly the foreign-owned firms, could adjust and benefit readily, moving to continental product mandating to take advantage of market access and economies of scale. There are already examples of MNE's in the industry rationalizing their operations in this manner, with Black & Decker being the most prominent. On the other hand, many of the smaller firms would face great difficulties in adjusting to competition from American firms which have typically produced on a massive scale for a much larger market. Lawn and garden tool manufacturers were flagged especially as likely to face serious problems in adjusting, however, producers of many different products would find the adjustment difficult. In the end, a spokesman for the CHHMA hypothesized that a limited "wipe-out" of firms would occur in some segments of the industry, with the gaps being filled subsequently by various entrepreneurs.

There would be substantial labour adjustment problems. Illustrating the types of problems is the current controversy surrounding Black & Decker's decision to close its Barrie plant and

shift the profitable lines to Brockville, with the resulting loss of several hundred jobs. The fact that the implementation of this decision has been postponed is indicative of the type of controversies which could arise. B & D is attempting to sell its Barrie operation to another firm whose interests are more compatible with current productions. Its success (or lack thereof) in doing so will be instructive. Regional adjustment problems would be limited because of the industry's present focus in central Canada.

Thus, the hardware/housewares industry would face challenging adjustment problems. Some disinvestment is possible, even probable; product mandating would lead to labour adjustment difficulties and, initially at least, some unemployment; and a number of firms would almost certainly go out of business. Where the chances for survival would be worst as, for example, among lawn and garden tool manufacturers, some stern opposition to free trade would be likely.

However, the industry is keenly aware of the need for greater international competitiveness, and is favourably disposed to deregulation generally. Many in the industry see the establishment of Canada-U.S. free trade as desirable and inevitable. In its brief, the CHHMA calls for the government to set out a clear program of intentions, so that a full discussion of all problems can be conducted and so that the necessary remedial steps to facilitate adjustment can be decided upon.

Publishing

The Canadian publishing industry has a high value of bilateral trade with the United States totalling \$1.2 billion in exports and imports in 1983, according to DRIE sources. The same year, it ran a \$659 million trade deficit with the U.S. In Tables 3-4 at the end of this chapter, it is accounted for largely in the literature sub-sector of consumer products. The industry receives substantial government protection, primarily through non-tariff barriers and financial support programs. It would probably suffer badly under free trade with the U.S. However, because it is considered by the federal government to be an essential cultural industry, it is unlikely to be included in a free trade agreement.

The publishing industry is divided into three genres - newspapers, periodicals and books. It is useful in discussing trade to make a distinction between newspapers on the one hand, and periodicals and books on the other. There is limited foreign trade in newspapers, which are produced primarily for local markets (there are some exports to Canadians living in the U.S.), whereas both books and periodicals are traded in significant quantities across the Canadian-American border. In terms of ownership, over 95 per cent of newspapers and periodicals are Canadian-owned, whereas 45 per cent of all Canadian book shipments are accounted for by foreign-owned firms (mainly American, but some British and French). Overall, there are approximately 1200 companies and 1400 establishments in the publishing industry. For the purposes of this study, the industry is defined as establishments primarily engaged

in publishing activities. The definition of the publishing industry can be expanded to include an additional two to three thousand firms engaged in publishing as a secondary activity. The vast majority of firms in the publishing industry are small. DRIE estimates that roughly 80 per cent of all firms have under 50 employees, approximately 15 per cent have between 50 and 500 and less than 5 per cent have over 500. Several of the largest are easily identified - for example, Maclean Hunter, Southam, and Thomson.

There is considerable intracorporate trade in the book publishing sub-sector with foreign-owned firms bringing approximately 60 per cent of their titles in from their parents. Canadian-owned firms also import approximately 40 per cent of their titles. In this connection, it must be remembered that 70 per cent of Canadian book sales are foreign titles. American multinationals dominate the market, not only in Canada but in Europe as well, due to the length of their production runs, their ability to attract the best known authors, superior marketing capabilities and, as a consequence of all these factors, the capacity to determine selling prices. They are less dominant in the production of periodicals which are more inclined to be aimed at local and national markets. However even here, American periodicals have the capacity to dominate certain segments of the Canadian market, and would if it was not for government regulations.

Overall, the publishing industry employs some 46,000 people in Canada. However, approximately 35,000 of these are employed by newspapers, and are thus relatively insulated from trade issues. Only

3,500 are employed by the most vulnerable branch of the industry - books. This disparity in employment is accounted for in large part by the fact that newspapers--and particularly dailies--do most of their own printing, while book publishers sub-contract most of this work. Partly for this reason, newspaper employment is highly unionized, while book and periodical employment is not. In terms of regional distribution, DRIE sources estimate that 85-90 per cent of book publishing activity takes place in Toronto and Montreal, while newspaper publishing is by its nature distributed across Canada. The regional distribution of periodical publishing falls somewhere between these two poles.

Trade in published materials is essentially tariff free throughout much of the world, including between Canada and the U.S.* Therefore, free trade in terms of the elimination of tariffs is of limited concern to the industry. However, mainly in response to the overwhelming strength of the American industry, the Canadian publishing industry is protected and supported by substantial government NTB's and support programs. The predominance of Canadian ownership in newspapers and periodicals is due mainly to government regulations and support

* However, Canada prohibits the importation of (1) periodicals in which more than 5 per cent of the advertising space consists of advertisements that indicate specific sources of availability in Canada and (2) split runs or regional editions of a periodical that contain any advertising that is primarily directed to a market in Canada and that does not appear in the other editions of that periodical (re tariff item 99221-1).

measures. In periodicals, Canada discourages Canadian advertisers from using foreign periodicals to reach Canadian consumers by means of tariff item 99221-1 as well as by making advertising costs deductible in domestic periodicals but not in U.S. ones. "Canadian" periodicals must be controlled by Canadian interests, and published and printed in this country for income tax purposes. Another non-tariff barrier to foreign periodicals is the mailing rate, which has three categories: a preferential rate for Canadian periodicals, a second rate for foreign periodicals printed in Canada, and a most expensive rate for foreign periodicals printed outside Canada*. It was the income tax restrictions which prompted Reader's Digest to Canadianize its operations in Canada; Time to drop its Canadian edition, and Maclean's to change from a monthly general interest magazine to a weekly news magazine.

In the book publishing sub-sector, the government, through the Department of Communications, has set up the "Canadian Book Publishing Development Programme" - an extensive financial assistance program which assists Canadian publishers to defray non-recurring pre-publication costs, to help improve the professional skills of their employees, to expand markets in Canada and abroad, etc. This industrial/trade development program is supplemented by financial assistance from the Canada Council to support the publishing of books of cultural value. In both Canada and the U.S., educational institutions give preference to domestic publishers in the purchase of educational materials. Preferential procurement appears to be the only widespread U.S. NTB.

* The government announced in 1983 its intention to phase out the preferential postal rate system.

If a free trade agreement was established whereby NTB's were eliminated, it would have a severe adverse impact on the Canadian publishing industry. Hardest hit would be book publishing, which would very nearly be wiped out; periodicals, too, would be adversely affected, though not as severely. Canadian book publishers could simply not compete with the economies of scale of American firms, whose profits on "best-sellers" allow them to subsidize sales in less profitable subject areas and markets. Periodicals would do better because they are frequently nationally or regionally oriented, and because Canada has several large firms in this sub-sector. Newspapers would be basically unaffected.

The consequence of these considerations is that the survival of the Canadian book publishing industry and the continued good health of the periodicals industry probably depends on their continued designation by government as key cultural activities. As such, they can expect continued government non-tariff support and protection - without this protection, their future would be dim.

Sporting and Recreational Equipment

The Canadian sporting and recreational equipment industry (our designation), or sporting goods industry, is distinctive largely because its products, and frequently companies, are differentiated by season. There are three major divisions in the industry: winter goods, including skating, hockey and skiing equipment, and goods like snowshoes; summer goods, including golf, fishing, baseball, football,

swimming, hunting, and camping equipment, plus bicycles and swimming pools; and "all season" goods, like gymnastics equipment, fitness products, and playground equipment. In addition to these and comparable equipment items, the Canadian Sporting Goods Association also includes some outerwear and sports footwear firms in its industry membership.

In 1983, according to the latest estimates, the sporting goods industry included 190 firms, employing 6600 mainly non-union workers. Of the total number of firms, 66 per cent had less than 20 employees, and accounted for only 11 per cent of shipments. At the other end of the scale, seven major firms - only two of which had over 500 employees - accounted for at least 45 per cent of industry employment.

Overall, the Canadian sporting goods industry had shipments of \$463 million in 1983, and a trade deficit of \$216 million. In trade with the United States, its deficit was \$84 million (see Table 5). According to DRIE figures, exports traditionally constitute approximately 20 per cent of shipments, and 75 per cent of exports go to the United States.

The industry is predominantly Canadian-owned. Over 90 per cent of all firms are owned by Canadians, and these firms account for 75-80 per cent of employment. However, foreign influence is strong among the largest seven firms. Of these, two are foreign-owned, one has definite financial and technical backing from outside Canada, and another can draw on foreign backing readily. Interestingly, the industry's seasonality and diversity mean that American firms are not the sole dominant external influence that they are in certain other sectors.

While American firms are the most prominent non-Canadian enterprises in the summer goods area, European firms are more influential in winter sports, while European and Far Eastern firms provide the biggest competition in bicycles.

Table 2 gives a sampling of Canadian and U.S. tariff rates on comparable sporting good items. It demonstrates that Canadian tariff rates on finished sporting goods are substantial from a low of 12.9 per cent on fishing rods to a high of 23.4 per cent on skates in this sampling. They are considerably higher than comparable U.S. tariffs. However the table also shows that many sporting good parts come into Canada duty-free: both golf club parts and bicycle parts are tariff-free. The tariff on the only comparable U.S. parts item, bicycles parts, was 10.5 per cent. The strategic implication of this tariff sampling is that Canada seeks to encourage the manufacture of finished products, but does not have the industrial base, market size, and scale economies to allow for a full range of backward linkages, and therefore relies to a much greater extent on the importation of foreign-made parts. Not surprisingly, a large proportion of Canadian imports are parts: of the \$298 million in total imports (not just U.S. imports) in 1983, \$70.5 million were imports of bicycle parts and accessories.

Non-tariff barriers are not an important factor in Canada-U.S. trade. The most significant NTB's are products safety standards on protective equipment. However, Canadian and U.S. standards do not differ considerably, so that these standards are most problematic in

Table 2

Selected Products in the
Sports and Recreation Equipment Sub-Sector:
Canadian and United States Tariffs, 1984

Product	Canadian Tariff	American Tariff
Hockey equip. and parts	of leather: 14.4% of nylon & plastics: 15%	1.7%
Skates, with boot	23.4%	7.4%
Skis	14.6%	5.2% - X-country 6.2% - other
Golf clubs	14.6%	5.9%
Shafts and grips for use in manufacture of golf clubs	free	
Baseball bats	14.6%	4.7%
Sport fishing rods	12.9%	10.9%
Bicycles	22.1%	11-15% (depending on size and value)
Bicycle parts	free	10.5% (most parts, except frames)

Revenue Canada, Customs and Excise, Customs Tariff, Departmental Consolidation, 1984; International Customs Tariff Bureau, International Customs Journal, United States of America, No. 21, (16th edition), 1983-84.

trade with European nations. Another potential NTB stems from the fact that skates are classified (logically) as footwear, so that importers must receive a licence due to government protective measures on behalf of the footwear industry. Licences have thus far been easy to obtain. Both the Canadian and the U.S. governments provide some financial and technical support to their respective sporting goods industries. In Canada, PEMD and other standard export financing programs are available. In addition DRIE and External Affairs have collaborated on some promotional projects and a few small-scale export seminars have been organized. In the U.S., the government recently provided the Sporting Goods Manufacturers Association with \$75,000 to organize export seminars, and with another \$100,000 to undertake market studies in selected export markets, including Canada.

As is the case with most industries, free trade would have a mixed impact on the sporting goods industry. The Department of Regional Industrial Expansion has developed some fairly specific ideas on this theme. Certain major sub-sectors would be highly competitive and could be expected to benefit from assured access to the U.S. market. Most important among these would be producers of hockey equipment and skates which have developed considerable expertise and efficiency. These products constitute Canada's largest single sporting goods export to the U.S., and free trade would enhance export sales. Second, and somewhat surprisingly, Canadian swimming pool manufacturers would benefit from free trade. This is primarily because most U.S. producers are located in California, so that central Canadian producers can supply major northeastern U.S. markets quicker and with much lower transportation

expenses. Even with tariffs, Canadian producers export about 30 per cent of their pool production - a total which would increase under free trade. Well behind these two sub-sectors, certain gym and exercise equipment companies which have developed competitive products would do well under a free trade regime. Together, these three sub-sectors already account for 45 per cent of Canadian industry shipments, and 85 per cent of exports.

On the other side of the coin, most "summer sports" would be adversely affected - notably golf equipment, fishing tackle, and baseball equipment. Manufacture of these and other summer products in Canada largely consists of the assembly of parts made elsewhere, and with most of these products strongly influenced by and under the shadow of U.S. manufacturers, producers of these products would fare badly in North American competition. A DRIE source suggested that the strongest objections to free trade would likely come from manufacturers of golf and fishing equipment. In bicycles, which accounted for 20 per cent of total industry shipments in 1983, the major competition comes (as previously stated) from the Far East. However, in the longer term, free trade could hurt future foreign investment in Canada. Whereas at present a foreign producer will manufacture under licence in both Canada and the U.S., under free trade it would be inclined to serve the entire North American market from the larger (U.S.) base. Thus, while on the whole disinvestment is not a serious concern in this industry due to the high percentage of Canadian ownership, free trade might have a negative impact on future investment.

Clearly, free trade would necessitate substantial labour adjustment, particularly in summer goods where some employment would be lost. This might be more than compensated for by employment growth in other sub-sectors, although not without costs of labour dislocation. Regional adjustment would be of limited importance, since 77 per cent of establishments, 93 per cent of employment, and 95 per cent of shipments are already based in Ontario and Quebec.

Overall, then, Canada's sporting goods industry would find free trade to be a mixed blessing. The strong would get stronger, and the weak would get weaker or disappear. In the end, it is important to decide how much value should be placed on having a diversified sporting goods industry and, more generally, a diversified manufacturing industry in Canada.

Garden Products

The "sundry crude materials and fabricated materials" category contains a number of sub-categories with surprisingly large volumes of Canada-U.S. trade. Total Canadian trade in this category in 1983 was approximately \$1,491 billion, and Canada had a trade deficit with the United States of over \$560 million. However, generally speaking, trade in these products is relatively unhindered by tariff barriers. In 1983, only 31.3 per cent of imports in this category were subject to duty.

The largest sub-sector in this catch-all category is the "garden products" group, with total Canada-U.S. trade in 1983 of approximately

\$385 million (see Table 7). This category consists of seeds, saplings, bulbs, nursery stock, nuts, and soya beans. Like the "sundry crude materials ..." category in general, trade in this sub-category is relatively unhindered by tariff barriers: only 7.0 per cent of imports in 1983 were subject to duty. However, discussions with several industry representatives in this diverse category revealed that there are some non-tariff trade barriers and costly regulations which aggravate trade relations between the two countries, and which are representative of the many ways in which trade is presently disrupted, if only to a minor extent.

The Canadian Seed Trade Association (CSTA) expressed concern over the effects of a couple of trade-relevant regulations--one in each country--in spite of the fact that most seed trade is tariff-free. Both Canada and the United States used to require that foreign-produced seeds be stained to indicate their country of origin. In the early 1970's, following an agreement to drop this requirement, Canada did so but, the U.S. continued to require staining. In 1983, the U.S. Customs Service introduced the requirement that all foreign seed shipments be accompanied by documentation of their country of origin, making the requirement for staining--which dated back to the USDA Federal Seeds Act of 1939--completely redundant. However, this costly requirement continues because there has thus far not been the necessary consensus among various U.S. state interests required to amend the legislation. The CSTA feels the staining requirement will likely be removed because of the pro-free trade orientation of the American Seed Trade

Association. However, Canadian seed producers have been waiting over ten years for this step to be taken.

U.S. seed exporters are concerned with current Canadian policy that requires that foreign seeds must be certified in a Canadian laboratory before going on sale in this country. If the seeds in question do not pass the test, the entire shipment must be returned to the U.S. at considerable expense. The CSTA is trying to address this grievance by working to get a number of American labs accredited for certification of seeds for the Canadian market--a logical step given the high volume of Canada-U.S. trade in seeds.

The Canadian Ornamental Plant Foundation (COPF) noted that foreign firms were inhibited from exporting to Canada because of the fact that there are no plant breeders' rights laws in this country. This means that Canadians can pirate the nursery breeding stock of foreign breeders with impunity--an effective way of discouraging exports to Canada. Canadian exporters, for their part, maintain a good trade with the U.S. Plant Breeders' Rights legislation was introduced in Parliament some years ago, and may yet be resurrected.

Thus, in spite of the small percentage of dutiable trade in garden products between Canada and the U.S., the industries in this category could benefit from agreements involving the removal of non-tariff barriers to trade. Where tariffs are applied in Canada as, for example, with orchids, rose bushes, and seeds in packages under one pound, the Canadian Horticultural Society asserts that tariffs are necessary to

protect Canadian nursery breeders particularly from U.S. mass-produced container products. It may be that garden products, along with agriculture, would require special treatment in a potential free trade negotiation. However, it is clear that real benefits could accrue to Canadian and American producers from some trade liberalization.

Table 3
Canadian Trade with the United States, 1978 and 1983:
Other End Products Sector
(\$ Canadian thousands)

	Canadian Exports		Canadian Imports		Trade Balance	
	1978 ¹	1978 ²	1983	1978 ²	1983	1983
Sub-sector						
Containers and Closures	67,978	107,390	192,286	167,055	263,910	282,889
Miscellaneous End Products	34,545	54,573	378,342	181,997	287,515	380,478
Special Transactions	101,971	161,092	189,063	246,160	388,878	727,451
Sector Total	512,895	810,261	1,385,297	1,603,068	2,532,493	2,690,965
						(1,722,232)
						(538,388)
						(1,305,668)

Statistics Canada, External Trade Division, Annula (Raw Customs Basis), 1984.

¹Current dollars

²Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

Table 4
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Other End Products Sector
(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4) ÷ (3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Rail Engines, Cars	123,632	103,652	42,935	22,140	80,697	81,153	13,371	11,806	16.6	14.5
Tires and Tubes	142,651	245,203	15,487	24,829	127,164	220,374	22,201	31,214	17.5	14.2
Trailers	56,727	39,034	567	1,997	56,161	37,038	9,794	5,538	17.4	15.0
Wagons & Vehicles, n.e.s.	3,591	2,535	2,008	1,399	1,582	1,136	224	123	14.2	10.8
Transport Sub-sector	326,601	390,424	60,997	50,364	265,604	340,060	45,590	48,681	17.2	14.3
Hand Tools and Garden Equipment	269,970	296,733	98,854	103,883	171,116	192,850	25,009	24,283	14.6	12.6
Printed Matter, Office & Artist Supplies, Stationery	204,681	322,419	33,098	116,034	171,582	206,386	30,241	29,124	17.6	14.1
Cameras and film	277,378	398,712	100,819	154,639	176,558	244,073	23,663	30,652	13.4	12.6
Plumbing Supplies	44,210	70,312	804	326	43,406	69,986	7,310	11,044	16.8	15.8
Military Weapons	6,949	42,425	4,995	34,238	1,954	8,186	283	1,078	14.5	13.2
Prefabricated Buildings and Structures	20,719	24,326	1,512	5,937	19,207	18,388	2,908	2,516	15.1	13.7
Containers and Closures	167,055	282,889	8,148	40,807	158,907	242,082	26,307	33,326	16.6	13.8
Misc. End Products	181,997	380,478	19,692	74,830	162,305	305,648	28,814	45,748	17.8	15.0
Special Transactions	246,160	727,451	180,006	482,118	66,154	245,333	9,202	32,639	13.9	13.3
Sector Total	1,745,719	2,936,168	508,924	1,063,177	1,236,795	1,872,991	199,326	259,092	16.1	13.8

Statistics Canada, External Trade Division, 1984.

Table 5
Canadian Trade with the United States, 1978 and 1983:
Consumer Products Sector
(\$ Canadian thousands)

	Canadian Exports			Canadian Imports		Trade Balance
	1978 ¹	1978 ²	1983	1978 ¹	1978 ²	
Sub-sector						1983
Tableware and Clocks	11,843	18,709	13,317	76,428	120,739	82,979 (102,030) (69,662)
Cleaning Supplies	4,346	6,866	19,406	57,024	90,085	47,083 (83,219) (27,677)
Sewing Equipment	1,451	2,292	3,211	18,599	29,382	19,354 (27,090) (16,143)
Cooking Equipment	3,587	5,667	10,579	45,422	71,757	69,159 (66,090) (58,580)
Miscellaneous Household Equipment	23,413	36,987	49,613	46,471	73,414	51,368 (36,427) (1,755)
Household Sub-sector	44,640	70,521	96,126	243,944	385,378	269,944 (314,857) (173,818)
Jewellery and Watches	10,088	15,937	19,783	35,717	56,425	43,972 (40,488) (24,189)
Luggage	3,391	5,357	6,239	5,288	8,354	7,112 (2,997) (873)
Toiletries	2,662	4,205	26,252	49,508	78,212	91,306 (74,007) (65,054)
Personal Products Sub-sector	16,141	25,499	52,274	90,514	142,992	142,390 (117,493) (90,116)
Recreation and Sport Equipment	38,400	60,664	64,068	98,347	155,367	148,107 (94,703) (84,030)
Games and Toys	9,441	14,915	29,592	69,083	109,136	127,395 (94,221) (97,803)
Literature	92,395	145,964	288,135	440,836	696,423	873,125 (550,459) (584,990)

Table 5

(Cont,d)
Canadian Trade with the United States, 1978 and 1983:
Consumer Products Sector
(\$ Canadian thousands)

	Canadian Exports		Canadian Imports		Trade Balance	
	1978 ¹	1978 ²	1983	1978 ¹	1983	1983
Sub-sector						
Works of Art and Collectibles	17,660	27,899	38,383	34,117	53,897	(6,712)
Firearms and Ammunition	5,808	9,175	3,255	36,230	57,235	(32,547)
Recreational Products Sub-sector	171,785	271,382	434,091	723,491	1,142,956	(834,075)
Sector Total	232,567	367,404	582,491	1,057,950	1,671,327	(1,098,008)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

¹Current dollars

²Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

Table 6
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Consumer Products Sector
(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4) ÷ (3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Tableware and Clocks	76,428	82,979	7,083	11,268	69,346	71,712	12,404	11,368	17.9	15.9
Cleaning Supplies	57,024	47,083	2,709	6,825	54,315	40,258	7,485	5,513	13.9	13.7
Sewing Equipment	18,599	19,354	5,391	4,015	13,208	15,339	2,246	2,445	17.0	15.9
Cooking Equipment (non electric)	45,422	69,159	3,169	5,345	42,252	63,814	7,376	9,368	17.5	14.7
Misc. Household Equipment	46,471	51,368	1,434	3,348	45,037	48,020	8,134	7,176	18.1	14.9
Household Sub-Sector	243,944	269,944	19,786	30,802	224,159	239,142	37,645	35,870	16.8	15.0
Jewellery and Watches	35,717	43,972	2,223	12,193	33,995	31,779	7,525	5,182	22.5	16.3
Luggage	5,288	7,112	131	62	5,157	7,049	1,033	1,247	20.0	17.7
Toiletries	49,508	91,306	892	3,027	48,616	88,279	7,445	12,921	15.3	14.6
Personal Products Sub-Sector	90,514	142,390	3,246	15,283	87,268	127,107	16,003	19,350	18.3	15.2
Recreation and Sport Equipment	98,347	148,107	9,691	57,978	88,656	90,128	14,751	13,173	16.6	14.6
Games and Toys	69,083	127,395	2,243	7,046	66,841	120,349	12,751	13,790	19.1	11.5
Literature	440,836	873,125	320,958	849,024	119,878	24,101	13,351	3,334	11.1	13.8

Table 6
(Cont'd)
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983:
Consumer Products Sector
(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4) ÷ (3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Musical Instruments	44,877	38,643	13,102	11,947	31,775	26,696	5,462	3,903	17.2	14.6
Works of Art and Collectibles	34,117	45,095	33,122	44,175	994	920	168	126	16.9	13.7
Firearms and Ammunition	36,230	35,802	602	2,999	35,629	32,802	4,686	3,816	13.2	11.6
Recreational Products	723,491	1,268,166	379,718	973,169	343,773	294,997	51,170	38,143	14.9	12.9
Sub-Sector	1,057,950	1,680,499	402,750	1,019,253	655,199	661,246	104,818	93,363	16.0	14.1
Sector Total										

Statistics Canada, External Trade Division, 1984.

Table 7
Canadian Trade with the United States, 1978 and 1983:
Sundry Crude and Fabricated Materials Sector
(\$ Canadian thousands)

	Canadian Exports			Canadian Imports			Trade Balance	
	19781	19782	1983	19781	19782	1983	19782	1983
Sub-sector								
Other Live Animals Sub-sector	12,598	19,902	22,834	22,281	35,199	24,832	(15,297)	(1,998)
Crude Animal Products, n.e.s.	60,531	95,626	72,165	110,389	174,390	166,343	(78,774)	(44,178)
Garden Products	45,040	71,153	127,586	219,934	347,447	257,257	(276,294)	(129,671)
Crude Vegetable Products, n.e.s.	43,042	67,997	71,189	21,146	33,406	24,712	34,591	46,477
Natural Animal Vegetable Fibers	8,367	13,218	22,072	92,253	145,739	112,484	(132,521)	(90,412)
Crude Products Sub-sector	156,979	247,992	293,012	443,743	701,016	560,796	(453,024)	(267,784)
Rubber Fabricated Materials, n.e.s.	5,506	8,698	17,820	95,790	151,327	153,925	(142,629)	(136,105)
Animal and Vegetable Oils, Fats and Waxes	13,839	21,863	23,261	121,699	192,258	126,301	(170,395)	(103,040)
Other Fabricated Materials, n.e.s.	46,607	73,629	108,465	102,893	162,548	160,017	(88,919)	(51,552)

Table 7
(Cont'd)
Canadian Trade with the United States, 1978 and 1983:
Sundry Crude and Fabricated Materials Sector
(\$ Canadian thousands)

	Canadian Exports		Canadian Imports		Trade Balance	
	19781	19782	1983	19781	19782	1983
Sub-sector						
Fabricated Materials Sub-sector	65,952	103,621	149,546	320,382	506,133	440,243
Sector Total	235,529	372,084	465,392	786,406	1,242,348	1,025,871
					(870,264)	(560,479)

Statistics Canada, External Trade Division, Annual (Raw Customs Basis), 1984.

1Current dollars.

2Constant dollars expressed in 1983 values. Refer to Table 3 of "Overview" for calculations of constant dollars.

Table 8
Canadian Imports from the U.S. and Tariff Protection, 1978 and 1983
Sundry Crude and Fabricated Materials Sector
(\$ Canadian thousands)

Sub-Sector	(1) Total Imports		(2) Duty Free Value		(3) Dutiable Value		(4) Duty Collected		(4) ÷ (3) Tariff (%)	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
Other Live Animals Sub-sector	22,281	24,832	22,052	24,622	229	210	18	13	8.0	6.1
Crude Animal Products, n.e.s.	110,389	166,343	105,940	160,117	4,448	6,226	409	390	9.2	6.3
Garden Products	219,954	257,257	203,996	239,193	15,958	18,064	1,996	2,247	12.3	12.4
Crude Vegetable Products, n.e.s.	21,146	24,712	14,242	16,758	6,904	7,954	469	434	6.8	5.5
Natural Animal and Vegetable Fibres	92,253	112,484	90,575	110,380	1,678	2,103	81	78	4.8	3.7
Crude Products Sub-sector	443,743	560,796	414,754	526,448	28,988	34,348	2,924	3,149	10.1	9.2
Rubber Fabricated Material, n.e.s.	95,790	153,925	47,137	81,738	48,653	72,186	8,574	10,531	17.6	14.6
Animal and Vegetable Oils, Fats, Waxes	121,699	126,301	40,200	51,350	81,500	74,952	9,073	6,891	11.1	9.2
Other Fabricated Materials, n.e.s.	102,893	160,017	10,440	20,314	92,454	139,703	15,340	19,748	16.6	14.1
Fabricated Materials Sub-sector	320,382	440,243	97,776	153,402	222,606	286,841	32,987	37,169	14.8	13.0
Sector Total	786,406	1,025,871	534,583	704,472	251,823	321,399	35,930	40,331	14.3	12.6

Statistics Canada, External Trade Division, 1984.

Appendix 1

Miscellaneous Consumer Products Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Tableware and Clocks	75865,75899,81049, 82021-82089,85024-85059, 81049	75899,81049, 82029,82089, 85059-85069
Cleaning Supplies	761,80063-80069	761,80069,80099
Sewing Equipment	862,944	86089,86090,944
Cooking Equipment (non-electric)	662,85007-85019	662,85049
Misc. Household Equipment	866,867	86099
Jewellery and Watches	82004-82018, 81017-81033	81017,81029, 82019
Luggage	864	86049
Toiletries	75817,75820,75866, 80019-80061,865	75820,80059
Recreation and Sport Equipment	61108-61120,75822, 75823,832	832
Games and Toys	837	837
Literature	891-894	891-894
Musical Instruments	921	921
Works of Art and Collectibles	946	946
Firearms and Ammunition	93001-93039	93015,93019

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

Appendix 2

Other End Products Sector Definition by Canadian International Trade Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Rail Engines, Cars and Accessories	571,57519-57559, 576	570
Trailers	584	584
Wagons and Vehicles, n.e.s.	61189,61199	611
Hand Tools and Garden Equipment	751-755,763	751-755,763
Printed Matter, Office and Artist Supplies, Stationery	895-905	895-905
Cameras and Film	911-91945, 91948-91999	911-919
Plumbing Supplies	671,672	671,672
Military Weapons	93099	93099
Prefabricated Buildings and Structures	941	941
Containers and Closures	950	950
Miscellaneous End Products	949,961	949-961
Special Transactions	970-995	970

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

Appendix 3

Sundry Crude Materials and Fabricated Materials, n.e.s.
Sector Definition by Canadian International Trade
Classification Commodity Codes*

<u>Sub-Sector</u>	<u>Import Commodity Code</u>	<u>Export Commodity Code</u>
Other Live Animals (Besides Livestock)	004,007,009	004,007,009
Crude Animal Products, n.e.s.	201-209	201-209,29165
Garden Products	211-213	211-213
Crude Vegetable Products, n.e.s.	214-219	214-219
Natural Animal and Vegetable Fibres	242-245,29119	242-245,29119
Rubber Fabricated Materials, n.e.s.	29185,321-325	29185,321-325
Animal and Vegetable Oils, Fats, Waxes and Other Extracts	391,393-399	391,393-398
Other Fabricated Materials, n.e.s.	306,493-494,496	306,493-494,496

* Data extracted from Statistics Canada, Imports (and Exports)
Merchandise Trade, 1978 and 1983, Catalogue 65-203 and 65-202.

